

MARINE RECORD

ESTABLISHED 1878.

VOL. XIX. NO. 50.

CLEVELAND—DECEMBER 10, 1896—CHICAGO.

\$2 PER YEAR. 10c. SINGLE COPY

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

PRESIDENT.

J. J. H. BROWN, Buffalo, N. Y.

VICE PRESIDENTS.

| | | | |
|------------------|-------------|----------------|---------------|
| H. H. Brown, | Cleveland. | C. A. Eddy, | Bay City. |
| J. W. Millen, | Detroit. | G. G. Hadley, | Toledo. |
| W. P. Herry, | Buffalo. | James McBrier, | Erie. |
| J. G. Keane, | Chicago. | Conrad Starke, | Milwaukee. |
| G. A. Tomlinson, | Duluth. | F. J. Firth, | Philadelphia. |
| Frank Owen, | Ogdensburg. | | |

SECRETARY.

CHARLES H. KEEP, Buffalo, N. Y.

TREASURER.

GEORGE P. MCKAY, Cleveland, O.

COUNSEL.

HARVEY D. GOULDER, Cleveland, O.

STEAMBOAT INSPECTION SERVICE.

The Supervising Inspector-General reports, for the fiscal year, that the personnel of the service at its close consisted of 169 officers, clerks and messengers.

The expenses were, for salaries, \$283,710.97; contingent expenses, \$67,468.20.

Total number of annual certificates of inspection issued to steam vessels, foreign and domestic, 8,297. Number of certificates issued to foreign passenger steam vessels, 300; to domestic steam vessels, 7,997. Total net tonnage, 2,238,020.56. The officers licensed numbered 39,917.

CLASSIFICATION OF INSPECTIONS, TONNAGE, AND OFFICERS LICENSED, ACCORDING TO THE SEVERAL DIVISIONS OF NAVIGATION:

| DIVISIONS. | Inspections of Steamers. | Net Tonnage. | Licensed Officers. |
|---------------------|--------------------------|--------------|--------------------|
| Pacific Coast..... | 640 | 174,409.83 | 3,501 |
| Atlantic Coast..... | 3,781 | 1,073,534.52 | 17,080 |
| Western Rivers..... | 1,042 | 142,242.29 | 7,244 |
| Northern Lakes..... | 2,227 | 739,120.85 | 9,046 |
| Gulf Coast..... | 607 | 108,713.07 | 3,046 |
| Total..... | 8,297 | 2,238,020.56 | 39,917 |

Increase in number of annual certificates of inspection issued to domestic steamers, over previous fiscal year..... 66

Increase in number of annual certificates of inspection issued to foreign steam vessels, over previous fiscal year..... 19

It is estimated that 600,000,000 passengers were carried on steam vessels during the year.

Total number of accidents resulting in loss of life during the year..... 42

Total number of lives lost by accidents from various causes during the year..... 231

Decrease in number of lives lost from previous year 173

Of the number of lives lost as above reported, 68 were passengers and 153 belonged to the crews of the vessels. Foreign steam vessels inspected, by nationality: British, 179; German, 47; Dutch, 14; Belgium, 13; French, 12; Norwegian, 10; Spanish, 5; Danish, 4; Portuguese, 2; Italian, 1; Hawaiian, 1; Russian, 1; Nicaraguan, 1; total, 293, with a total net tonnage of 558,345.90.

Total number of new life-preservers examined.... 39,840

Found deficient and rejected..... 5

Number passed..... 39,835

Total number of color-blind examinations of applicants for master's or pilot's license..... 1,520

Number rejected..... 41

Number passed..... 1,479

Under the Act of Congress approved January 22, 1894,

6,561 marine boiler plates were tested at the mills, of which 524 plates were rejected for various defects.

The Supervising Inspector-General renews his recommendations of last year for legislation authorizing the Secretary of the Treasury to divide local inspection districts into two or more such districts, with a board of local inspectors in each, when the work in any district may be more economically conducted in such manner than it could by appointing assistant inspectors to the original board of inspectors, when the increased number of inspections requires additional help.

The recommendations are also renewed in behalf of legislation to secure a non-partisan service, and permanent tenure of office, except for incompetency, misconduct, or permanent physical or mental disability; and for legislation creating an Assistant Supervising Inspector-General, to be appointed by the president by and with the consent of the Senate, on account of the large increase of work in his office, such work having increased over 160 per cent. since 1876, making such appointment in the office of the Supervising Inspector-General an absolute necessity for the proper personal supervision necessary to carry out the objects for which the office of Supervising Inspector-General was created.

PORTAGE LAKE CANAL.

Supt. G. W. Marr, of the Portage Lake ship canals, is having plans prepared in the office here for much needed improvements for both entrances to Portage Lake, with a view to securing the necessary appropriations at the present session of Congress. The plans call for a 1,700-foot breakwater at the east side and 900 feet long on the west side of the Lake Superior entrance, built at an angle of 45 degrees with the shore, and with a 400-foot entrance, with low piers connecting the breakwater with the shore to prevent sand working into the channel. It is also proposed to extend the present pier at the Keweenaw Bay into 20 feet of water, a distance of 2,800 feet from the entry.

SEAMEN SCARCE.

There are not enough men available in the navy to man the ships in commission and, in consequence, some of the vessels are short-handed. Men cannot be got to make up the deficit caused by the large number of desertions that have occurred since the ships of the squadron have been undergoing repairs at the New York navy yard. The departure of a draft of 200 men from the receiving ship Vermont, to make up the crew of the cruiser Brooklyn, which will go into commission at the League Island yard Tuesday next, leaves the navy yard without enough men to do the work necessary to keep the Vermont in condition.

All the ships in the squadron have suffered from lack of men. The flagship New York and the battleship Indiana are without their full complement. When the Maine left the yard at New York this week her crew was fifty short of the full complement.

REGARDING NAVIGATION LAWS.

In his latest annual report, which is not as yet in print, T. C. Chamberlain, Commissioner of Navigation, recommends to Congress the repeal of eighteen sections or statutes relating to minor matters in navigation laws, on the ground of their uselessness. The report is devoted chiefly to recommendations for the repeal of many of our navigation laws for the last century, which were copied verbatim by the earliest Congresses from laws of George III. of England. Commissioner Chamberlain points out that every other nation long ago repealed these laws, but we alone retain them as a handicap on our merchant marine. He shows that our merchant marine is in the keenest competition, first with

merchantmen of foreign nations, whose governments have freed them from the shackles of old laws which we still retain, and again with American railroads, which are strongly organized and have protected themselves generally from burdensome laws under which navigation interests are compelled to operate.

CHICAGO DOCK OWNERS IN A FIX.

Since the control of Chicago river as a waterway has again been assumed by Uncle Sam, business firms who have made a practice of taxing vessel property heavily each season for the privilege of occupying their dock fronts for winter quarters, find themselves in a fix. A Chicago morning paper says: "Business firms owning docks along the river front have made complaint that vessel owners tie up before their docks and refuse to move their craft when ordered to do so. Commissioner of Public Works Downey has asked the corporation counsel for an opinion regarding the authority of the city over the dock property. The vesselmen set up the claim that the river is United States government water, and that they have a right to tie up at any place they desire, providing they do not use the dock inside the water line. Capt. Marshall, the United States engineer, says he has no authority to compel boats to move."

A GREAT FRENCH LIGHT-HOUSE.

The penetrating powers and ranges of powerful lights such as are employed in light-house service, rapidly decreases as the ratio of their luminous power increases. For instance, a light of 5,000,000 candle-power in the British Channel has in average weather a luminous range of about 44 nautical miles, while if the light be increased to the power of 10,000,000 candles, the luminous range is only five miles more, or 49 miles. According to current practice, lights up to 200,000 candle-power are obtained by means of mineral oil lamps, while electric lights are used for higher powers, and almost any power may thus be obtained. The highest power yet attempted is about 36,000,000 at Penmark Point, in the department of Finisterre, France, which, when completed, will be the most powerful light-house illumination in the world. The height of the tower in which it is to be located is about 63 meters, enabling it to be seen during the day from a distance of 18 miles in fine weather. During the night this light will be visible for 60 miles. The rotundity of the earth will prevent the rays from striking the eye directly at a distance of more than 30 miles, but the sky overhead will appear illuminated for 30 miles more. The estimated cost of this light-house is about \$120,000.

NOTICE TO MARINERS.

The Hydrographic Office announces the publication of a new edition of sailing directions for the Great Lakes and connecting waters, revised and corrected to date. In this edition it has been thought best to present in one volume complete sailing directions for the lakes, leaving out the several articles of information useful to mariners, which appeared in the earlier editions. Copies of this book of sailing directions can be procured from agents of the Hydrographic Office for the sale of its publications.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR,
NINTH DISTRICT, CHICAGO, ILL., Dec. 8, 1896.

Notice is hereby given that Eleven Foot Shoal light-vessel, No. 60, has left her station, northern end of Green Bay, and gone into winter quarters.

J. H. DAYTON,
Commander U. S. Navy, Inspector 9th L. H. District.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to The Marine Record.

J. A. Calbick & Co. chartered the steamer A. E. Runnels for wheat to Toledo at 2½ cents.

Capt. Alfred Mitchell and Messrs. H. A. and W. A. Hawgood, of Cleveland, were in this city on Tuesday.

The steamer City of Louisville has been laid up at Benton Harbor and her crew have been transferred to the Jay Gould.

The steamer Westover was libeled here on Saturday on a claim for damages arising from a collision with a canal boat about a year ago.

J. G. Keith & Co. chartered the steamer America for wheat to Buffalo at 2¼ cents; the steamer Brazil for corn to Buffalo at 2½ cents.

Capt. W. H. Humphrey, of the steamer Neshoto, which he laid up at Duluth, went through this city, Tuesday, on the way to his home at Painesville, O.

The steamer New Orleans unloaded a cargo of hard coal at the O. S. Richardson Fueling Co.'s dock, at the north side of the harbor entrance, last week.

Harry Sharp, of Detroit, first mate of the steamer R. L. Doty, laying up here, went to Milwaukee Sunday, and married one of the fairest daughters of that city.

At the Independent Tug Line's floating dry-dock, the tug Jesse Spalding was in for recalking and reironing; the tug A. Dorr for general repairs, a new shoe and a new wheel.

The lumber steamer Emma E. Thompson, Capt. W. H. Evans, arrived here on her last trip of this season on Saturday, with lumber from Marinette. She has had a very successful season.

J. J. Rardon & Co. chartered the steamer Aragon for wheat to Fairport at 2¼ cents; steamer Aurora for clipped oats to Buffalo at 1¾ cents; steamer Phoenix for barley to Buffalo at 2¾ cents to hold.

The Goodrich Transportation Co.'s steamer Iowa had the steam chest of her engine blown out off Two Rivers, Wis., on the 6th inst. Fortunately, no one was injured. The tug Arctic towed her to Manitowoc for repairs.

At the Chicago Shipbuilding Co.'s shipyard the steamer S. R. Kirby is in dock for some new bottom planking and new wheel blades; the Aurania, E. M. Peck, Hartnell, Pope and Yuma will go into dock in rotation.

The steamer John Mitchell, with a cargo of 85,000 bushels of corn, was recently in the Chicago Shipbuilding Co.'s dry-dock for a new wheel. The docking was very carefully done and the steamer came out in excellent shape.

Wm. Fitzgerald, of the Milwaukee Dry-Dock Co., was here last week, making arrangements to have the Anchor Line steamer Conemaugh go in the company's dry-dock at Milwaukee and receive very extensive repairs.

Carr & Blair chartered the steamer Edward Smith No. 2 for wheat to Buffalo at 2¼ cents; the steamers Robert L. Fryer and John F. Eddy for corn to Buffalo at 2½ cents; the steamer Katahdin for wheat to Buffalo at 2¼ cents.

H. B. Burger was here last week, looking over the L. M. & L. S. Transportation Co.'s steamer City of Traverse, which left here Saturday for Manitowoc, where she will go into Burger & Burger's dry-dock for extensive repairs.

Capt. P. Griffin made an exceptionally quick trip with the steamer Charles Stewart Parnell, on her last trip this season. The Parnell left South Chicago for Erie with 80,000 bushels of corn, at 9:30 P. M. on Nov. 28th, and arrived back at this port from Erie, with 2,000 tons of coal at 7 A. M. on Dec. 6th, making the round trip in 7 days 9½ hours.

Capt. John Stewart, who commanded the steamer City of Milwaukee for the Graham & Morton Transportation Co. during the past season, arrived here Friday morning to take charge of the steamer Jay Gould, which left here Tuesday for Milwaukee, to run between that port and St. Joseph, for the Graham & Morton Transportation Co., who have chartered her for the winter months.

Capt. Charles McIntosh, who commanded the Graham & Morton Transportation Co.'s steamer City of Chicago, during the excursion season, and was transferred to the steamer City of Louisville when the Chicago was laid up on Sept. 21st, went to his home at Detroit last week, to spend a well earned vacation until the Chicago goes into commission again next year.

Harvey C. Beeson, publisher of Beeson's Marine Directory, has returned to the city after an absence of four weeks spent at Minnesota, Wisconsin and northern Michigan lake ports. He reports general trade as looking up. Times at Sault St. Marie have been, and are, particularly good. The greatest confidence is felt relative to the renewal of the iron ore and lumbering interests.

At Miller Brothers' shipyard the steamer A. R. Colborn was in dock to have a leak stopped and repairs to stern bearing; the steamer Kitty M. Forbes for new stem iron, some calking and repairs to stern bearing; the steamer City of Duluth is in for recalking bottom and reironing. The steamer Jay Gould went out of dock Monday, after receiving extensive repairs to her hull and reironing.

Last Thursday night the barge Michigan, in tow of

the tugs Welcome and W. H. Wolf, when going up the river, coal laden, collided with the State street bridge and badly damaged the railing and sidewalk and demolished the bridge-tender's caboose. WILLIAMS.

MARINE CITY, MICH.

Special Correspondence to The Marine Record.

The schooner Larrey Sims is getting entirely new bows and keel at the old Curtis-Brainard yard on Belle river.

Repairs will be numerous around the creek this winter, as owners of old craft will have to do something to them, or lose what little rating they now hold in Lloyds' register.

M. Sicken returned last week from Horse Shoe Reef where one of his barges, the C. L. Young, is ashore. He reports the wreck in bad shape and is doubtful if she can be released this fall.

At Anderson's yard the George Nester, one of the Norway pine barges built by the Nesters at Baraga, is being torn down preparatory to being given a rebuild. She will be cut down by four strakes below the covering board and will be given new top sides of oak. Steel arches will also be placed in her.

Mr. Lester has the work on the Mark Hopkins, which was sunk by the Vanderbilt in Hay Lake during 1895, and was subsequently raised and brought here, the damaged hull having been entirely rebuilt. Carpenters are now finishing the cabins, and machinists are setting up the engines. She will be equipped with two pole spars, steam hoists, steam windlass, capstans, steering gear, and everything necessary to make up a modern, single decker.

A tug hull 50 feet long, 16 feet beam and 7 feet deep will be built for Capt. J. C. Miller, who will place the old tug Thompson's machinery in her. When completed she will be used by Alger, Smith & Co. in their log business at this port and to assist the Volunteer and Gettysburg over the flats and crossings through the river. At the same yard three large wooden mud scows will be built for use in Lake St. Clair.

The following steamers, schooners, barges and tugs, are in winter quarters at this port: Cherokee, Kate Buttironi, Havana, Sparta, Mohegan, Schoolcraft, Abercorn, W. H. Sawyer, Santa Maria, Vigilant, Geo. King, Mark Hopkins, M. Sicken, Thos. Thompson, Ed. Smith, No. 1; Tempest, No. 1; Tempest, No. 2; Miami, D. F. Rose, J. P. Clark, Jas. Beard, Aztec, Maizel, Lyman Posey, John M. Hutchinson, Geo. Nester, Mary N. Bourke, Zopatec, Thomas Gawn, Teutonia, Delaware, Buckeye State, Boscobelle, Uranus, Camden, Joseph Paige, Racine, Mingoe, Chippewa, Dayton, Yankee, N. C. West, W. H. Hawkins, C. E. Redfern, A. C. Tuxbury, Maria Martin, Angus Smith, Levi Rawson, Homer, Albany, Jane Ralston, Alice Richards, Grace Whitney, Ethel, Chas. Spademan, E. J. McVea, St. Joseph, Lucinda Lozen, Larrey Sims, Keepsake, Checotah, Home, Melvina and Comfort. The above fleet aggregates more tons than have ever sought winter quarters here at any one time. They are mostly lumber boats, and very few have paid interest on the money invested in them. FIGUREHEAD.

CLEVELAND, O.

Special Correspondence to The Marine Record.

The Globe Iron Works Co. announce that they have contracted to equip the boilers of one of the Mutual Line steamers with Serve ribbed tubes and the Ellis & Eaves' system of draft.

The employees of the Vessel Owners' Towing Co. will give their third annual ball on December 23, at Army and Navy Hall. A pleasant party is being prepared for. The music will be furnished by Faust's full orchestra.

Under a bill for libel amounting to \$500, the schooner Surprise was sold by the United States marshal last week for \$375. The sale was at public auction at the court house. Quite a number of vessels were present, but only two among them bid. The Surprise was built at Milan, Ohio, in 1865. She cost her original owner \$2,500. Two years ago William O'Brien bought her for \$2,200.

The Globe Iron Works Co. notified the Treasury Department that the revenue cutter Gresham would be completed during the present month, and the officials have replied that as a result of investigation and comparisons they feel justified in asserting that this vessel, which will be placed in commission at the opening of navigation in the spring, will be far and away the finest revenue cutter ever in service on the Great Lakes.

In speaking of the matter, Capt. Shoemaker, head of the revenue marine service, said: "The Gresham will be, indeed, the finest revenue cutter anywhere in the world, and will only be surpassed by the one which the government is now building for service on the Pacific coast. With 50 tons of coal on board she will draw only about 10½ feet of water, and will easily make 16 or 17 knots per hour."

Secretary Carlisle in his estimates of appropriations transmitted to Congress, placed \$400,000 opposite the words for continuing improvements on the harbor at Cleveland. In doing that he merely follows out the provisions of the river and harbor bill passed at the last session. It is not a recommendation, but merely a statement to Congress that in order to carry out existing laws it ought to put that much in the sundry civil ap-

propriation bill. A recommendation of \$5,725 for the drainage and improvement of the marine hospital grounds at Cleveland is submitted.

Apparently, Capt. John Davidson, of Bay City, and Capt. C. E. Benham will not determine the loss on the steamer Wallula. They have disagreed and will probably discontinue work. Capt. Davidson said that he would return home. Capt. Benham and Davidson have been engaged on the Wallula for about ten days. The survey progressed slowly and after many disagreements the surveyors reached the machinery. Capt. Benham proposed that a practical machinist be called in to assist. Capt. Davidson was opposed to the proposition, he considering the assistance of Capt. Thomas Murphy, who was previously chosen to arbitrate differences, sufficient; hence the disagreement and rather hard feeling, unless Capt. Cy Sinclair, representing McDonald, of Chicago, can smooth over the difficulty. I have heard it expressed several times lately that Cleveland people, that is owners, brokers and surveyors, are getting somewhat hoggish in their propensities and would like the world with a fence around it when on disputed settlements.

SEASON'S FATAL LOSSES.

Sixty-six lives were lost in navigating the great lakes during the season now closing. Compared with previous years this list is much below the average. One cause for the lessening of disasters is the improved construction of lake boats.

The most serious disaster was the wreck of the schooner Waukesha off Muskegon on November 7, by which six lives were lost.

Next in point of numbers was the loss of the schooner Mary D. Ayer on May 17. The schooner Sumatra foundered off Milwaukee on September 4, carrying down four seamen. A boiler explosion on the Rhoda Stewart off Alpena ended three lives, and three were burned with the City of Kalamazoo on November 30. On July 9, the schooner Little Wissahickon went down, taking the captain and two of his crew. The captains of the Ayer and the Little Wissahickon endeavored to save their craft, but instead lost their lives.

Twenty-six sailors fell overboard and were drowned. Six fell through open hatches and were killed. One diver was suffocated when at work on the Cayuga. Miscellaneous causes make up the balance of the death list of sixty-six.

But one passenger of the large number carried by lake steamers was lost. It will never be known whether this passenger fell overboard or committed suicide, but disputed settlements. NAUTILUS.

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., of New York, in their regular circular announce the freight market as follows:

Although we cannot point to a large list of fixtures since our last report, we are pleased to be able to state that the end of the declining tendency of freight rates appears to have been reached, doubtless largely owing to the fact that owners are not offering their tonnage as they did when the decline first set in. Freight rates on grain are well maintained as last submitted, and whilst there is not much inquiry for later months, the demand for December and January has been fairly active. Some charters have been effected for cotton for December loading from Atlantic ports, and 35s. for Liverpool or Continent secured. There is little inquiry for case oil to the East by steam, and boats desiring this trade would have to make quite a concession from last figures. The late demand for timber has evidently been filled by charterers, who are now disinclined to continue chartering, except at a concession from last fixture rates.

Our market for sail tonnage continues quiet but firm, and we have no appreciable change to report. The only interesting feature is the continued demand for tonnage to South Africa, in which direction several vessels have again been taken at about previous rates. In petroleum, lumber and naval stores but little has been done during the past week, but rates about hold their own, as far as spot or near-by tonnage is concerned, whilst for far-off shipment the inquiry is a very limited one only.

The above report applies to charters effected in New York, Philadelphia and other neighboring ports, so that western readers may take cognizance of how business is doing down East.

The Russell Wheel and Foundry Co., of Detroit, have been awarded the contract for erecting two beacons on Put-in-Bay Island, on a bid of \$14,000.

FLOTSAM, JETSAM AND LAGAN.

Navigation is practically ended at Menominee.

The barge Nestor will be rebuilt from the water-line up; cost, \$9,000.

The steamer Penobscot left Duluth, bound for Buffalo, with a cargo of flour—the last departure of the season.

The Welland canal will not close until December 13. This is the last week for the Canadian Soo canal.

It is stated that \$30,000 will be spent in giving the Anchor Liner Conemaugh a rebuild at Milwaukee this winter.

The engines of the passenger steamers North-West and North Land are to be overhauled at W. Superior this winter.

The steamer Schoolcraft will be double-decked and receive new cabins this winter at Anderson's shipyard, Marine City.

Only one-sixteenth of the steamer J. S. Fay, stranded this week at Scott's Point, was insured. That interest is owned by Capt. George Stone.

The schooner Starke, from Chicago to New Orleans, has been compelled to give up the voyage for this fall, on account of ice in the St. Lawrence river, and she will lay up at Ogdensburg for the winter.

The entire down-bound fleet cleared from the "Soo" river on Tuesday morning, headed by the Algomah. The North Star, the last boat of the season going to Lake Superior, passed up at 1:20 Tuesday morning.

Four tugs tried to pull the steamer Coralia off the bottom at Superior this week, but were unsuccessful, and she will stay there all winter. Captain reports 20 feet aft and 16 feet forward, but she is fast and cannot be moved.

Messrs. E. C. Recor and L. Recor, of St. Clair, Mich., and H. C. Schmuck, of Springfield, Mass., have purchased \$26,500 worth of the stock of the Hopkins Steamship Co., from James Corrigan, of Cleveland, vice-president of the company.

The steamer George Farwell, which has been in the general cargo trade all season, has been chartered for the winter months by the Ann Arbor road to run between Frankfort and Kewaunee. She left Sunday night to go on the route.

Shipments of steel rails for Japan are passing through the port of Superior via the Northern Steamship and Great Northern railway lines. About 6,000 tons have been shipped thus far, and other consignments are due on their way to the Orient.

Capt. John Dennett, U. S. N., of the revenue cutter Calumet at Chicago, has formally turned over the command of that craft to his successor, Capt. W. H. Cushing. Capt. Dennett left Saturday for Galveston, Texas, there to take command of the revenue cutter Galveston.

Thomas Nolan and Joseph Howard, firemen on the steamer City of Naples, got into a fight with John Fritz, the engineer, when Howard drew a razor and did considerable slashing. Fritz was taken to the Emergency hospital, Milwaukee, and Nolan and Howard were locked up by the police.

Although a number of grain vessels were laid up through the summer, the gross tonnage of the Canadian "Soo" canal increased materially over last year. This season, from May 4 to November 30, 5,080 vessels passed through; and last year, from September 9, when the canal was opened, to November 27, the number was 1,173.

The report of the Canadian chief engineer of railways and canals, just made, shows that the Canadian "Soo" lock has worked perfectly all the season, and that over 7,000 vessels have passed through this year. The Canadian "Soo" has more water than the American canal, and has caused no bother at all by any breakages, whereas the American canal has more than once needed attention.

The treasury department reports the following business done at Marquette for the present year ending June 30: Vessels entered, 9,067; vessels cleared, 9,007; entries of merchandise, 1,599; documents issued to vessels, 226; duties and tonnage tax, \$12,747; aggregate receipts, \$14,341; value of exports, foreign, \$4,200; domestic, \$5,262,693; expenses, \$21,561; persons employed, 23; cost to collect a dollar, 1.50.

The steamer Republic has discharged about 1,100 bushels of wet wheat at Buffalo this week. She cracked a plate and two frames in the ice on Mud lake, causing a leak. The steamer Niko will also have much wet barley, owing to a broken pipe. There is a prospect

that the Lackawanna coal trestle will be opened to load the steamers Florida and Scranton for Chicago. The line is anxious to send them back there, and can get no coal from the other companies.

The steamer Penobscot, with a cargo of flour for Buffalo, left Duluth on Monday, and was the last departure of the season. The Coralia is still aground in Superior and another attempt will be made to release her, although, on account of low water, it is not likely to succeed. It is not thought that she will depart for the lower lakes in any event. The close of navigation finds a stock of only 2,000,000 bushels of wheat at the head of the lakes. This is the smallest amount since 1887.

On Wednesday, at Milwaukee, William Roach, employed as watchman on the steamer John N. Glidden, fell from the texas through an open hatch into the lower hold, a distance of thirty feet, and miraculously escaped instant death. A physician was promptly summoned, and found that Roach had no broken bones even, but was hurt internally. The injured man was then sent to the Marine hospital for treatment. Roach lives in Cleveland and is married.

Capt. Eber Ward, of Detroit, has in his possession a 66-year-old receipt for freight received by an old schooner, which shows freight rates as follows: "Received on board of the schooner Marshal Ney, now lying in port at Mackinac, Twelve BBs of Beer to be delivered to Daniel Whitney—for and on the account of Robert M. Eberts—dangers of the lakes only excepted. He paying freight at one dollar Per Barrel. SAMUEL WARD.

"November 17, 1830."

Word comes from Washington that in spite of the statement that the Detroit bridge bill will not come up at this session of Congress—a statement which emanates from Senator McMillan's office, and is undoubtedly correct—the opponents of the bill are upon the ground, and ready to fight it. The latest to reach Washington was Harry B. Joy, of Detroit, who has taken up the battle along the lines followed by his father, and is very energetic in expressing his views. He wants a bridge, but wants it upon mutual ground, down the river from Detroit, and not in Michigan Central territory.

The Nyack, formerly one of the most popular Lake Superior passenger steamers, has been given a \$25,000 rebuild to fit her for winter navigation on Lake Michigan. An important feature of her reconstruction was the renewal of the arches, and adding to their strength by steel-capping them. The captain of the Nyack declares her to be in even better shape than when she was built. Her single mast has been replaced by two pole spars with gaffs similar to those carried by all of the Goodrich Line steamers, except the City of Ludington and the side-wheelers. The boiler of the Nyack received new furnaces and a general overhauling.

UNIFORMITY IN YACHT MEASUREMENTS.

A committee representing yachting interests on the lakes reports this week that the measurements show that the Lake Erie fleet lacks in sail spread 10 per cent. of being equal to that of the Lake Ontario yachts, and may have a bearing on the results of the races the past summer. The committee further say: Considering that we recommended measuring the water line with the crew, or an equivalent, aboard, and looking forward to our yachts increasing their sail spread, the result will be an increase of the corrected length. We therefore recommend adding two feet to each class limit, making them 27 feet, 32 feet, 37 feet, and so forth, placing the yachts in the same class as heretofore.

After considerable correspondence and delay your committee, with the committee appointed by the Lake Ontario Association, met at Buffalo November 7. We took the rules of the Long Island Sound Yacht Racing Union and the proposed changes in the rules of the New York and Larchmont Clubs as a basis. The sailing regulations were agreed to by both committees, and your committee favors and does recommend their adoption in full.

To provide for a continued uniformity we recommend also that the Inter-Lake Yachting Association join the Yacht Racing Union of the Great Lakes. Something must be done to provide against this everlasting tampering with the rules. The expense yacht owners are put to continually is a tax on yacht racing. Uniform rules promote an intelligent understanding of their objects and tendencies. It will enhance the value of yachting property and promote a healthy spirit of rivalry among the yachtsmen on the chain of lakes.

OBITUARY.

(CAPT. WILLIAM NEAL.)

The remains of Captain William Neal, whose sudden death by heart disease occurred Saturday morning last, at Ashtabula, O., were taken to his home in Port Huron, in charge of his brother, Capt. W. D. Neal, and the remains were interred at Elm Lawn cemetery.

The immediate cause of the captain's death was heart disease. He was engaged in laying up his boat and worked within half an hour of his death. He arose early Saturday morning, partook of breakfast, and went about to make the boat fast to the dock for winter. About 9:30 o'clock he complained of a pain in his chest, and his brother-in-law, Mr. Purser, steward of the boat, prepared and gave him a panacea. He took the medicine, which seemed to relieve him for a short time, but a half hour afterward he again complained of pain in his chest, and the steward started to prepare another dose of the medicine. While he was thus engaged, Capt. Neal, who was on deck, commenced to stagger, and Mr. Purser reached his side just as he was about to fall. He assisted him to bed where he shortly afterward expired.

Capt. Wm. Neal, who was 62 years old at the time of his death, came to the United States from England with his parents when a child. The family located in Detroit, and the son, when 14 years old, commenced sailing. He located in West Bay City 22 years ago, where his family now resides. He has been with the Mills Transportation Co., of Port Huron, owners of the Biwabic, for 23 years. During his career the captain visited nearly every port on the chain of lakes, and was well and favorably known wherever he went.

The deceased leaves a wife, four daughters, Misses Viola, May, Nettie and Anna, who reside at home, and an only son, Capt. Walter Neal, of Port Huron.

Capt. Neal was a member of Wenona Council, Royal Arcanum, in which he was assured therein for \$1,500, and he leaves quite an estate besides.

CAPT. FRAZER DEAD.

Capt. James Frazer, well known on the lakes, died at Milwaukee Tuesday. He was 63 years of age, and had been sailing since he was 16 years old. For 25 years he was in the employ of E. M. Peck, of Detroit, having commanded the Amazon, Minneapolis, E. M. Peck and S. R. Kirby. He left the Kirby two years ago at Ashtabula. A week ago he took command of the steamer City of Fremont, of the Huron Line. He caught a severe cold last Saturday, which resulted in his death. Capt. Frazer was unusually well liked and had sailed on the lakes for 47 years, latterly in command of the highest classed tonnage.

NOTES.

THE policy of discriminating duties in favor of our ships is not perhaps an impossibility. But in actual practice it would hurt our shipping interests more than anything else, while at the same time giving a bad blow to our export trade in manufactured goods. The peculiar policies that ruled international trade one hundred years ago are not possible to-day. The most cursory study of the conditions existing then and now will make this manifest.—N. Y. Maritime Register.

SECRETARY HERBERT has reprimanded engineers Menocal and White as responsible for the dry-dock accident at the New York navy yard last August, but has declined to courtmartial these officers. In an official communication forwarded to Mr. Menocal the secretary says that in view of that officer's long and faithful service he would not courtmartial him, but the findings of the court of inquiry are approved, and the department "reprobates" Menocal's conduct. Mr. White, whose responsibility was in less degree, was similarly "reprobated." Conductor Bowles, on whom an effort was made to shift the blame was exonerated.

WE acknowledge receipt of a copy of the Adams Cable Codex, which is published by F. O. Houghton & Co., ship brokers, steamship agents and commission merchants, of No. 115 State street, Boston. This is the eighth edition of the work. Full explanations are given so that any one may use the code for cabling, whether the party addressed has a copy of the code or not. The price in paper is 25 cents, in cloth 50 cents. Messrs. Houghton & Co., have also reprinted in attractive pamphlet form for distribution, from the New York Herald, some of Geo. W. Smalley's attractive and interesting letters on ocean travel.

Abstract of Proposals for Extension of Breakwater and Sand Catch Pier, at Buffalo, N. Y., Opened November 30, 1896, by Major T. W. Symons, Corps of Engineers, U. S. A.

| RUBBLE MOUND BREAKWATER. | | | | | | | | | | TIMBER CRIB BREAKWATER. | | | | | | | | | | SAND CATCH PIER. | | | | | | TOTAL RUBBLE MOUND. | TOTAL TIMBER CRIB. | TOTAL SAND CATCH PIER. | GRAND TOTAL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----|--|-----|----------------------------------|--|--------------------------------------|-----|---|-----|--|--------|--|-----|--|--------------------------|--|-----|---|-----|---|-----|---|-----|---|---------------------------|---|--------------------|---|--------------|---|-----|--|-----|---|---|---|-----|--|-----|--|-----|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| From Rubble Mound to S. Harbor Entrance | | | | | From South Harbor Entrance to Stony Point. | | | | | Oak Piling, per pile. | | | | | Norway Piling, per pile. | | | | | Beech Piling, per pile. | | | | | Walling, per linear foot. | | | | | The Rods, Screw Bolts and Straps, per lb. | | | | | Transporting and fitting Pile Shoes, each | | | | | Stone filling, per cu. yd. scow measure. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rubble Stone, per cu. yd. scow measure. | | Rubble Stone, per ton of 2,000 pounds. | | Gravel per cu. yd. scow measure. | | Capping Stone, per ton of 2,000 lbs. | | Rubble Stone in Canada, per cu. yd. scow measure. | | Rubble Stone in Canada, per ton of 2,000 pounds. | | Capping Stone in Canada, per ton of 2,000 lbs. | | Transporting Rubble Stone from Canada, per cu. yd. scow measure. | | Transporting Rubble Stone from Canada, per ton of 2,000 lbs. | | Transporting Capping Stone from Canada, per ton of 2,000 lbs. | | Rubble Stone in Foundation, per cu. yd. scow measure. | | Rubble Stone in Foundation, per ton of 2,000 lbs. | | Gravel Filling in Trench, per cu. yd. scow measure. | | Excavating trench per cu. yd. place meas. | | Gravel Filling in Trench, per cu. yd. scow measure. | | Excavating Trench, per cu. yd. scow meas | | Excavating Trench, per cu. yd. scow meas | | Rubble Stone in Foundation, per cu. yd. scow measure. | | Rubble Stone in Foundation, per ton of 2,000 lbs. | | Standard Timber Crib Breakwater complete, per linear foot. | | Mooring cleats in place, each | | Mooring posts in place, each. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| \$1.00 | .80 | .80 | .64 | .25 | \$1.92 | .55 | .45 | .84 | .45 | .35 | \$1.08 | .80 | .60 | .50 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .25 | .30 | .80 | .2 |

PORT IMPROVEMENTS AT DULUTH.

One of the recommendations of President Hugo, of the Duluth Chamber of Commerce, at the annual meeting of that body, was for some action tending to secure protection for the outer harbor and for pier heads at the canal entrance which may be as distinct as possible for vesselmen that may be required to enter the harbor from the lake in heavy weather at night.

Capt. Robertson, of the steamer Monarch, who brought his vessel through the canal in the storm of Thanksgiving day, says he could not see the piers, although he could tell where they lay by the range lights.

The recommendation concerning the piers has been anticipated, and more too, by Major Clinton B. Sears, U. S. A., the government engineer for Lake Superior. With regard to protection for the outer harbor, the major says he does not approve of it at government expense. He regards the proposition as one for protecting private property at public expense. Major Sears says the time may come when shipping in Duluth harbor will become so congested that the outer harbor may be protected by the government, but it will not be for some years yet.

The proposition about the piers, however, meets with the approval of Major Sears, and it transpires that he has already provided for the work, if his plans come out right, as he is sanguine they will. He says he expects to save enough money out of the continuous contract appropriation to widen the canal 50 or 100 feet and rebuild the piers with concrete. The idea of making the pier heads more distinct, so as to be visible to vesselmen on dark and stormy nights, will be brought out fully. The major proposes to build much higher pier heads than the present ones, and they will be of concrete of light gray color, and it is calculated they will be distinguishable under any circumstances. It is possible the pier heads may be painted white.

The News-Tribune says the widening of the canal, which Major Sears proposes, will lessen the danger to vessels in a great degree. The need of increased width is felt by the shipping interests more particularly since 5,000-ton vessels have become common. With greater width of the waterway connecting the harbor and lake, and more prominent pier heads at the entrance from the lake, it is estimated that danger to mariners under any conditions will be reduced to a minimum, and with piers of the substantial character that Major Sears proposes to build, the Duluth canal will be a matter of pride for Duluth citizens and the maritime community.

TRAFFIC THROUGH ST. MARY'S FALLS CANAL.

REPORT OF FREIGHT AND PASSENGER TRAFFIC TO AND FROM LAKE SUPERIOR FOR THE MONTH OF NOVEMBER, 1896, INCLUDING STATISTICS OF THE UNITED STATES AND CANADIAN CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO:

| EAST BOUND. | | | |
|--|--------------|-----------------|-----------|
| ITEMS. | U. S. Canal. | Canadian Canal. | Total. |
| Copper, net tons..... | 9,241 | 1,133 | 10,374 |
| Grain, bushels..... | 4,696,387 | 622,270 | 5,318,657 |
| Building stone, net tons..... | 537 | | 537 |
| Flour, barrels..... | 1,544,398 | 223,968 | 1,768,366 |
| Iron ore, net tons..... | 341,853 | 84,652 | 426,505 |
| Iron, pig, net tons..... | 4,217 | 2,100 | 6,317 |
| Lumber M. ft. B. M..... | 50,122 | 1,282 | 51,404 |
| Silver ore, net tons..... | | | |
| Wheat, bushels..... | 7,346,331 | 2,608,352 | 9,954,683 |
| Unclassified freight, net tons..... | 13,015 | 3,917 | 16,932 |
| Passengers, number..... | 148 | 130 | 278 |
| WEST BOUND. | | | |
| ITEMS. | U. S. Canal. | Canadian Canal. | Total. |
| Coal [hard], net tons..... | 34,976 | 9,305 | 44,281 |
| Coal [soft], net tons..... | 229,431 | 60,304 | 289,735 |
| Flour, barrels..... | | | |
| Grain, bushels..... | | | |
| Manufactured iron, net tons..... | 13,509 | | 13,509 |
| Salt, barrels..... | 25,479 | 6,400 | 31,879 |
| Unclassified freight, net tons..... | 52,421 | 6,010 | 58,431 |
| Passengers, number..... | 71 | 12 | 83 |
| East bound freight, net tons..... | | | 1,149,639 |
| West bound freight, net tons..... | | | 408,273 |
| Total freight, net tons..... | | | 1,557,912 |
| Total craft, United States..... | | | 1,042 |
| Total craft, Canadian..... | | | 350 |
| Total..... | | | 1,392 |
| Total registered tonnage, United States..... | | | 1,109,693 |
| Total registered tonnage, Canadian..... | | | 244,765 |
| Total..... | | | 1,354,458 |

SEAMLESS COPPER AND BRASS TUBE WORKS.

A WATERBURY, CONN., INDUSTRY.

(Illustrated.)

In connection with the outfit and final equipment of first-class tonnage, piping and tubes of various diameters enter more largely into the work of the shipbuilder than is generally supposed; at the same time, there are but few firms engaged in the high-class manufacture of this special product, and none in the United States in any way comparable with the firm of Randolph & Clowes, of Waterbury, Conn., where pure seamless copper and brass tubes up to a diameter of 36 inches are regularly turned out from the works. We are also pleased to add that a specialty is made of shipwork; that is, everything in this line required in the construction, outfit and equipment.

The business of Randolph & Clowes was established in April, 1886, by Edward F. Randolph, of New York, and George H. Clowes, of Waterbury. The new firm purchased the seamless tube and patent range boiler plant from the trustees of the Brown & Bros.' estate. This was done by Mr. George H. Clowes, the managing member of the firm, against the advice of men who had spent years of their lives perfecting similar works and were fully aware with what they were obliged to contend. This did not serve to deter Mr. Clowes in the least, but rather had an opposite effect, inasmuch as he was determined to make the business a success, and he has succeeded, we might say, even beyond his most sanguine expectations.

It takes something more than pure grit for one man

The works of the company being herewith illustrated, we are led to say that the marked success of Randolph & Clowes is demonstrated by the fact that there have been more organizations effected during the last forty years to manufacture seamless drawn brass and copper



GEO. H. CLOWES, FIRST VICE-PRESIDENT.

tubing that have failed or gone out of business, than are now in existence. Many of these companies were organized with very large capital, which has been entirely sunk, ruining many of the original investors.

The seamless tube business is one of great technical difficulties, requiring the most costly and ponderous, as well as delicate, machinery. Only skilled workmen, of many years' experience, are employed in this particular

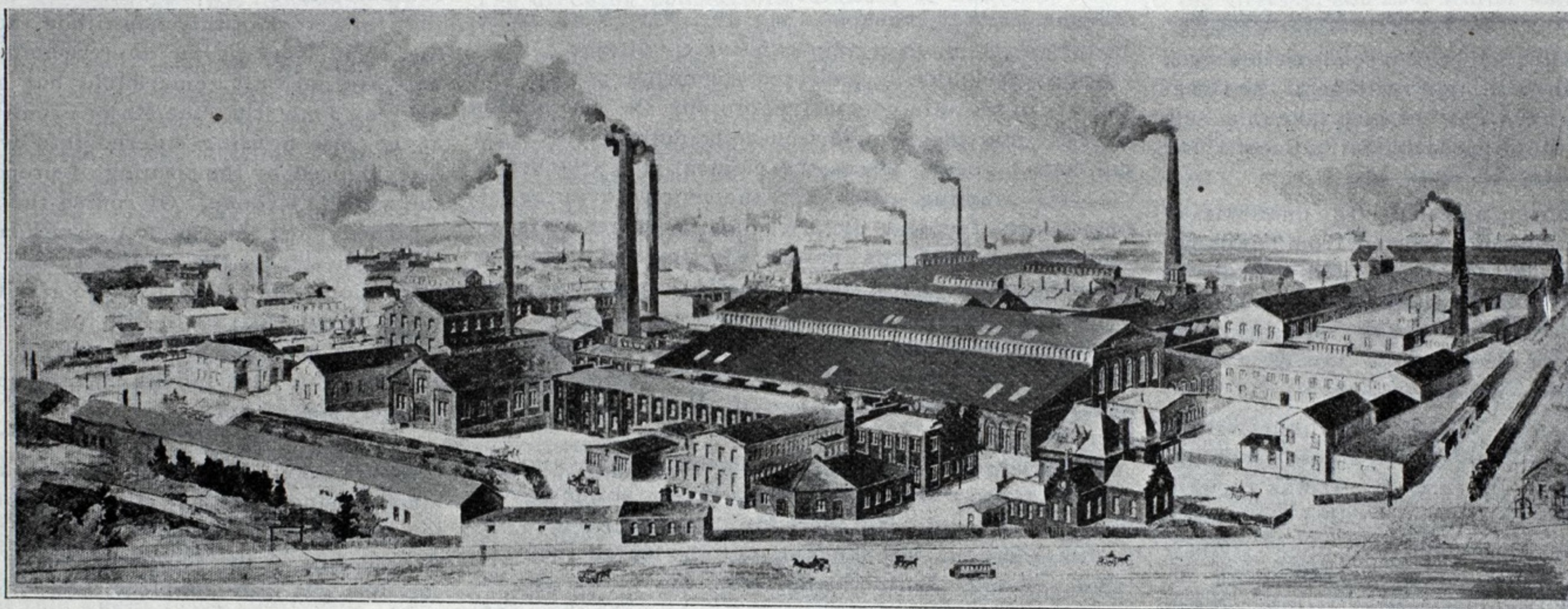
first roll a sheet either of copper or brass, circle it, and then from the circle draw the tube. Hence this firm has to-day more methods of drawing tubes than any other concern in the world, all peculiarly adapted to the special sizes or qualities desired, and many of the methods or devices fully protected by patents.

Plumbers all over the world know the merits of the patented seamless drawn, copper house-boiler, manufactured by Randolph & Clowes. They realize its many points of superiority, strength, durability and appearance. "It is a little expensive," is the manner in which they treat allusions to the boilers, forgetting, in some instances, that the best is always the cheapest.

As these boilers are made up to 24 inches in diameter, 200 gallons capacity and seamless drawn, requiring an immense outlay in the ponderous machinery, aside from the protection of patents, the firm has no reason to fear competition in that line.

SUBMARINE DIVER'S OUTFIT.

The dress of a fully equipped diver of the present day weighs 169½ pounds and costs about \$500. First of all comes 8½ pounds of underclothing; then follows the dress itself weighing 14 pounds; boots 32 pounds, monstrous things with leaded soles; breast and back weights, 80 pounds; and lastly the helmet which weighs 35 pounds. When the hull of the Great Eastern was cleaned by divers as she was being loaded with the cable for the Indian submarine telegraph, the contract price of the work was \$9,000 and it was completed in six weeks by twelve divers. The incrustation on the bottom was



WORKS OF RANDOLPH & CLOWES, WATERBURY, CONN.

to build up a business occupying seven acres of ground, employing 500 men, and turning over three-quarters of a million dollars a year, but from his earlier history we find Mr. Clowes was endowed with his full share of indomitable pluck and perseverance. After being in the banking business with his brother at De Pere, Wis., he is next found under the competent instruction of Col. Tompkins, who had been commissioned to educate officers for military positions, where he passed a successful examination before the Board of United States Examining Officers and was at once appointed adjutant of the McClellan Infantry, after having aided in recruiting 600 men for a new regiment. On a second call for troops he at once re-enlisted, a musket on his shoulder, with the Forty-seventh Regiment, N. G., S. N. Y. Soon he was appointed sergeant-major of the regiment, which position he held when mustered out. He had likewise during the war of the rebellion, an extensive experience in the navy of the United States. For a year and a half he served on the United States gunboat Flambeau, doing duty off the coast of North and South Carolina, Georgia and Florida. Later he was transferred to the U. S. storeship Home, and was faithful to duty aboard this ship until she was ordered home, in the summer of 1864. His elder brother, Joseph Clowes, now retired, was also in the service of the navy of the Union as admiral's secretary, and the loss of a leg at the fall of Fort Fisher sufficiently attests his love of country and his sacrifice for her in her hour of sore distress. This is all the more marked, as he volunteered his services for shore duty against the admiral's advice not to go ashore with the marines.

branch of the business. The manufacture of tubing, up to four or five inches in diameter, requires more than ordinary skill and outlay as to capital, and the difficulties are very greatly increased with every increased inch in diameter greater than four inches. From this fact only two or three seamless tube manufacturers make tubes up to eight inches, the rest confining themselves to tubing up to four or five inches.

The largest tubes made in Europe are only twelve or fourteen inches, and only one or two companies make anywhere near as large as these sizes. Realizing that what everybody could do would become unremunerative, Mr. Clowes has for the past five or six years been most steadily and constantly bending all his energies in the way of developing his plant and machinery to turning out tubes of the greatest dimensions, until now the firm turns out tubes 38 inches in diameter, 6 feet long; 24 inches in diameter, 12 feet long; 12 inches in diameter, 20 feet long. And we may here remark that the cost of one hydraulic bench alone, exclusive of the pumps necessary to run it, on which the larger tubes are drawn, exceeds the enormous sum of \$80,000, and it may also be mentioned that it is the largest machine of its kind in the country.

Owing to the chemical characteristics of copper, it has been considered almost an impossibility to get castings perfectly sound. The difficulties, however, are not or have not been unsurmountable until the larger diameters are attempted. Recognizing these obstacles, and to overcome them, Mr. Clowes made up his mind long ago that the only way to get an absolutely perfect tube, or a seamless tube at all of large diameter, was to

more than a foot thick, and after it was removed she lifted fully two inches. The greatest depth at which a diver can safely work is thought to be 150 feet. There have been, however, rare instances of diving to 204 feet, and sustaining a pressure of 88½ pounds on every square inch of the body of the diver. Diving was first incepted by the action of the elephant in crossing a deep river, when he swims beneath the water, elevating his trunk, by which means he breathes. The flagships in the British navy carry eight divers, and the cruisers four each, fully equipped.—Strand Magazine.

BILLS OF LADING.

In dismissing the libel of the Ginn Publishing Co. against the Ogdensburg Transportation Co., in the Federal Court at Chicago, Judge Grosscup gave a legal construction to maritime bills of lading that is new to that circuit. The Ginn Co.'s shipment of books were spoiled by bilge water. The bill of lading called for the filing of claims within thirty days, and the beginning of an action within ninety days. The publishing company did not commence suit until twenty-two months after the damage was done, and claimed that the bill of lading could not make a limitation different from the limitation under the statutes. Judge Grosscup held differently. He said: "It has been frequently held that, within reasonable limits, parties may substitute by contract limitation upon the bringing of actions for the general limitation provided by statute. The only question is whether ninety days is a reasonable limitation. I am disposed on that question to follow the ruling of the Circuit Court of Appeals for the first circuit, in which this precise question of the bill of lading was upheld."



ESTABLISHED 1878.

PUBLISHED EVERY THURSDAY BY

THE MARINE RECORD PUBLISHING CO.,

[INCORPORATED.]

GEORGE L. SMITH, President.

C. E. Ruskin, - - - - - Manager.
 Capt. John Swainson, - - - - - Editor.
 Thomas Williams, Chicago, - - - - - Associate.

CLEVELAND, CHICAGO,
 WESTERN RESERVE BUILDING. ROYAL INSURANCE BUILDING.

SUBSCRIPTION.

One copy, one year, postage paid, \$2.00.
 One copy, one year, to foreign countries, \$3.00.
 INVARIABLY IN ADVANCE.

ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office.

THE MARINE RECORD PUBLISHING CO.,
 Western Reserve Building, - - CLEVELAND.

Entered at Cleveland Postoffice as Second-Class Mail Matter.

CLEVELAND, O., DECEMBER 10, 1896.

THE Hydrographic Office, U. S. N., sends us this week a volume comprising the sailing directions of the Great Lakes. Hitherto they have got out each lake in a separate edition and now they approach Scott's Coast Pilot.

It was reported some time ago that large quantities of manufactured iron were being exported from Alabama. It is now learned that 3,000 tons were sold to Calcutta this week and that 2,500 tons have been sold and shipped to Liverpool. The Carnegie Company has also just received a large order for steel rails for Japan.

INSURANCE rates expire to-day, and underwriters thereby close down on lake navigation, unless particular and special requirements are rung in. It was thought some time ago that the vessel-owners ruled the season of navigation, or rather their judgment did in connection with the weather. That aspect of affairs is all off, and boats are not now run in December without being covered by a liberal insurance policy.

ACCORDING to THE RECORD's view of the question the Milwaukee Wisconsin observes that: "The technicality which prevents lake shipbuilders from building armored war ships for the government ought to be removed. Building a war ship at a lake port is not maintaining her as an enemy; and if a new war vessel is taken to the seaboard from a lake shipyard within a reasonable length of time, there should be no reason why the government could not contract with lake builders."

THE New York Maritime Register says that the policy of discriminating duties in favor of our ships is not perhaps an impossibility. But in actual practice it would hurt our shipping interests more than anything else, while at the same time giving a bad blow to our export trade in manufactured goods. The peculiar policies that ruled international trade one hundred years ago are not possible to-day. The most cursory study of the conditions existing then and now will make this manifest

SUPERVISING Inspector-General Dumont, of the steamboat inspection service, in his annual report, wants congress to authorize the secretary of the treasury to divide local inspection districts, with a board in each district. He also wants a non-partisan service and permanent tenure of office, except for incompetency, misconduct or permanent disability. Last year the service issued annual certificates to 8,297 steam vessels, foreign and domestic. To foreign passenger vessels the number was 300, and to domestic vessels 7,997. The total net tonnage was 2,238,020.56.

TRANSPORTATION OF WESTERN GRAIN.

There is a feeling extant that there may be a more profitable or a least expensive way of transporting grain from the western country than via Buffalo and the Erie Canal, the channel which this trade has followed for many years, and to uphold which millions of dollars will be spent by New York on the improvement of the canal this winter.

This question seems to be treated in a liberal and logical manner this week in the columns of the Buffalo Enquirer, nor can any exceptions be taken to the article in which the proposition of rivalry is set forth.

The Enquirer says: "The problem of the cheapest way of getting our surplus grain to the seaboard is never out of sight and never can disappear as long as there are half a dozen routes all seeking to establish themselves in the lead. There seems to be, for all that, no good reason why the Buffalo route should not remain the cheapest of them all, in spite of the reported 'gains' and 'showings' made by the various Southern and St. Lawrence routes that are making their appearance periodically, as if to laugh at our pretensions and the pretensions of each other.

This rivalry is right and proper, for it is through such competition, harmful as it often is to the individual, that the problem of cheap transportation has been solved in a general way. If it can be shown that there is a cheaper and better route for sending the surplus grain of the West to Europe than to send it through Buffalo there is no one able to stay its course, whatever may be undertaken. A western paper this week publishes a table which attempts to show that the New Orleans route is cheaper than the New York route, basing the claim on certain existing conditions.

Unless the table is analyzed somewhat carefully it appears to be quite conclusive, proving the assumption so easily that there would seem to be nothing further to say, but it goes to pieces the moment it is attacked at the very starting point, for the chief advantage is found in the fact that the price of corn at present is two cents less in St. Louis than it is in Chicago. No other grain is taken up, of course, for there is not the same advantage with wheat. Here is an assumption that St. Louis is to become a successful rival of Chicago and that it is practicable to ship corn by the Gulf route at any time of the year, neither of which is a fact, or is ever likely to be.

Chicago is the grain center of the country and the weather is too warm most of the year for shipping corn by the Gulf route. No, there are dangers inside of the Buffalo route that are much more to be feared than any from without. Both Chicago and New York are too deeply absorbed in grain speculation to make them safe watchers of this valuable feeder of the actual markets on this route. They can buy and sell millions of bushels on 'Change every day, and they do it, without ever seeing a kernel of it or of delivering it to the buyer.

It is to someone else besides the grain speculator that we must turn when this route is in actual distress from outside rivalry. That the actual grain dealer, who sells to the consumer, or at least for actual delivery, is a safer guardian of these interests is plain from the advantages gained by the Buffalo grain dealers a few years ago, without any assistance from either New York or Chicago. This market is much less powerful than either New York or Chicago, but the moment its grain dealers became united they accomplished their ends, put the Buffalo market on a good footing and very materially strengthened the whole route.

The difference between the all-rail charges quoted by the western paper, five cents from Buffalo to New York, is margin enough to save this route for a long time yet, though there is no harm in canvassing the matter to discover if possible how near the danger really is."

To this we might add that the change of route will take place just as soon as a higher stage of economy can be shown by diverting the trade to another route, and not one day earlier.

UNJUST DISCRIMINATION.

President Cleveland has issued a proclamation which suspends the law relieving German vessels from tonnage dues and other charges in American ports. This is done upon evidence that American vessels are not given those privileges in German ports.

The president declares that Germany is now exacting tonnage and light-house dues in excess of the dues ex-

acted from German shipping in the ports of the United States. This revocation of the relief accorded German shipping goes into effect January 2, 1897. Evidences of an unfriendly disposition on the part of the German government toward the United States have been accumulating ever since the differential duty on bounty paid German beet sugar was imposed by the Wilson tariff law.

American cattle have been excluded on the pretext of the danger of contagion from Texas fever, which can not exist in northern climates. American hog products have been excluded, even though enclosed in cans, on the allegation that these cooked products might contain trichinae, which cannot exist in cooked food.

Discriminating and prohibitive duties against American oleo glucose and petroleum, and many other exports which formerly went to the German empire, have followed one after the other. All these matters have been made the subject of vigorous protest from our government, much of the correspondence having been conducted by Edwin F. Uhl, now ambassador in Berlin, while he was our Assistant Secretary of State. Mr. Uhl is therefore particularly well qualified to deal with the existing situation should it grow more tense.

THE two-million dollar contract on the Buffalo breakwater contract has not yet been awarded, but many of the bids come very close to the estimate figured on by Major Symons, of the Corps of Engineers, U. S. A., namely: \$2,200,000. We note that the average of all bids was \$2,198,966, which is but \$1,034 less than the estimated cost. To THE RECORD Major Symons stated that for a work of this magnitude and character, including some work of an unprecedented character, these bids are not only remarkable but gratifying, and we have no doubt that the Major is entitled to feel pleased at the close figuring entered into by himself and staff as evidenced by the opening of proposals this week for the work to be done. Of course the contract cannot be awarded until the Chief of Engineers at Washington determines from the figures submitted, and other considerations, the proper party to give the contract to, and he print the abstract in full for the present and future guidance not only of the government contractors, but also as a fair data for the marine public to judge from on this class of work.

ADMIRALTY lawyers think they are not getting as much business on the Lakes as formerly. I would like to say that they need not growl about this feature after the passing of the so-called "White Bill," for no man can now get into trouble without his culpability being clearly apparent even to the uninitiated. There will be more rescinding, corrections and additions to square up that hurried legislation, and more cause for the same in the near future, than there was in passing it.

DUNKIRK IMPROVEMENTS.

The report of the special committee of the Board of Trade, having the care of matters relating to the improvement of Dunkirk harbor, which was made to the executive committee of the board last Saturday and given out for publication, was welcome news to the people of Dunkirk, showing, as it does, that the work will be started shortly and that its progress is and will be carefully looked after by gentlemen who have the interests of the port at heart. The report says that the plans and specifications for the work are about complete and will be sent to Washington soon. They are so comprehensive that if carried out they will give Dunkirk, early in 1898, a harbor second to none on Lake Erie.

WEEKLY FREIGHT REPORT.

The season closes with Chicago wheat quoted at 2½ cents, and vessels asking 2½ cents. Two cargoes came from Toledo to-day at 1¼, Erie or Buffalo. Coal rates are 60 cents to Lake Michigan for the final loads, but as insurance expires Dec. 10, the lake freight market may now be considered closed.

WIND SIGNALS.

Wind signals will be discontinued on the lakes as follows: Lake Superior, with the closing of the locks. Lakes Michigan and Huron, Dec. 10. Lower lakes, Dec. 15.

LAKE UNDERWRITING.

From an article on marine underwriting published in a lake daily we take the following excerpt:

"Because of this British competition the owners have in a measure the power to enforce any reasonable demand they might see fit to make on the American underwriters for lower rates. It is certain that the Britishers will come again in the spring, and it is equally certain that they will continue to come after that, now that they have a foothold. The English Lloyds are the most powerful vessel insurers in the world. Though the insurance is placed by the companies or the individuals, each by itself, it is placed through the association of them all. They sit and look at their blackboards containing recitals of the vessels and the wrecks, all in a large hall and their business is done in somewhat the manner followed by our boards of trade. They have reduced the system of making and placing insurance to a fine art, and they are not going to be deterred by so small a thing as competition from fighting the Americans when they see a prospect for eventual profit. To them the owners may flock if they deem the American rates too exorbitant—and that is the way they talk now. It is love of country and dislike of England that has induced so many of the owners to patronize the Americans at higher rates in the season just closed. It will be interesting to see how much of a figure patriotism will cut next year, with the losses of this and other seasons bearing down on the memories and pockets of the owners and whispering to them to take the cheapest that is offered. But it is more than likely that to meet the competition the Americans will lower their rates.

Mr. William A. Livingstone, of Detroit, who is undoubtedly an authority says:

"Reckoning from the season's losses on the lakes, the marine underwriters might find some reason to reduce the insurance rates. As compared with those of last year losses have been fewer and smaller. But last year was a rather unusually bad year for underwriters. The Northern Wave's going on at Sand Beach was a loss of 75,000. When the Cayuga sank there was a loss of \$225,000, and the sinking of the Norman cost \$180,000. When the Mark Hopkins sank in collision is St. Mary's river there was a big loss to pay, and there were others of considerable size. The list of this year's losses can not be compared with that of last.

"Then, for every grounding at Bar Point this year there were ten last year. For every one at Grosse Point there were twenty last year. The improvement of the channels at these two places no doubt had the largest influence for the better showing there. The St. Mary's rules have had a similar good effect in that river, yet I do not think the first rule ought to be continued. One of our boats was fined under it when the captain had to choose between going aground and passing the steamer Servia, as the latter had stopped to shorten up the line of the Moravia, which she was towing. No harm was done by passing, and none was likely to be done. Under such circumstances, the rule is very unjust."

SHIPBUILDING.

The Bessemer Steamship Co. closed a contract this week, with F. W. Wheeler & Co., of Bay City, for a steel towbarge, to be a duplicate of the schooner building at the Globe yard, Cleveland. She will be 378 feet long, 44 feet beam and 26 feet deep. She will go into commission May 1, 1897. Some more figuring is being done by builders, and the indications are that one or two contracts will be closed by the end of the week.

It is now stated that the three new boats for the Northern Line will carry freight only, in which case they will by no means be duplicates of the North West, as the dispatches had it. Just how soon there may be an announcement made as to when work will begin or where the boats will be built is indefinite as yet, but it is learned that the steamship company has decided to build three new freighters of large size. Each of the new boats will be very much larger than any of the vessels in the company's present fleet, and it is said to be the purpose of President Hill to have them run between Duluth and Buffalo without stop at any other ports. After they come out the present fleet will pay more attention to intermediate ports than they now do. The new vessels will be more speedy than any of the package freight boats now in commission. They will be designed for the 20-foot draft between Duluth and Buffalo, which has been in prospect for several years

and which is now about to be realized. The season just closed has been a very profitable one for the Northern Steamship Co., and the improved prospects for business for next season, in a general way, are said to have been responsible for the inquiry that is being made by the steamship company relative to new ships. During the present season the Northern Steamship Co. has had regularly chartered boats in its fleet, and the necessity for additional tonnage has been felt for some time, but it is said President Hill was not anxious to build until the 20-foot channel project was near completion, which has now been practically realized.

President Graham, of the Graham & Morton Transportation Co., was in Chicago this week, to complete the negotiations for a magnificent new side-wheeler for the Chicago-St. Joseph route. The plans for the steamer were drawn some time ago, and since that time the ship-building companies have been figuring on them. The deal with the Chicago firm, it is thought, will be closed this week. The boat will be one of the finest on the lakes, and will have a carrying capacity of 3,000 passengers.

James McBrier, managing owner of the steamers Fedora, Nyanza and Uganda, in which Carl G. Nielson, of this city, is also interested, is figuring on building a large schooner, to come out at the opening of navigation next spring.

The Detroit Boat Works, Mr. Ballin manager, sent in the lowest bid, \$21,310 for the construction of special tonnage for the U. S. Corps of Engineers, to be used in survey work on the improvement of rivers and harbors, etc.

The dredging contractors, Dunbar & Sullivan, will build at Sault Ste Marie, this winter, a large steel scow for use in their work. The dimensions are 120 feet in length, 28 feet beam and 11 feet deep, to be completed May 1.

The Goodrich Transportation Co. contemplate building another steamer, but whether the work will be undertaken this winter or delayed for another year is a matter not yet determined. At all events the steamer will be built by Burger & Burger, Manitowoc. She is to be of the same size and general model as the Indiana.

The Lydon Andrews Dredging Co., of Chicago, have contracted with E. W. Heath, of Benton Harbor, Mich., for a tug 85 feet long, 20 feet beam and 11 feet depth of hold. She will be a duplicate of the Andrew H. Green, and will cost \$17,000.

Specifications and plans for a 300-foot steel steamer, with bottom-sheathed and all modern improvements and equipment, were got out this week by J. L. Crosthwaite, of Buffalo, and submitted to the various builders to figure on. A special sent out from Buffalo calls this a 5,000-ton boat, but her dimensions are to be less than 300 feet over all, and, it is needless to say, that such a craft will not be expected to carry the cargo that we are now all so prone to talk about, viz., 5,000 tons.

THE DETROIT RIVER BRIDGE.

Ashley & Dustin propose a site for a high bridge across the Detroit river, that would have no piers in navigable water and whose longest span would be 1,000 feet.

They propose that a span of 500 feet shall reach from Ecorse to Mud Island; a span of 500 feet, from Mud Island to Grassy Island; a span of 1,000 feet, from Grassy Island to Fighting Island across the Canadian channel. The advantages claimed for the proposed site are that there would be no very long spans and that no piers would be in locations to interfere with navigation in any way. There would have to be spans across the islands, to connect the spans stretching across the water, however, and there would be a curve in the bridge.

The bridge bill now in the Senate is as good as killed, but this project always called for piers and abutments in a navigable channel.

CAPT. WM. NEAL DEAD.

Capt. Wm. Neal, master of the schooner Biwabik, died at Ashtabula on Saturday. He had been ailing for some time, but less than an hour before his death was at work aboard the boat. His home is in Bay City, and his relatives took charge of the body. The Biwabik arrived at Ashtabula Thursday to go into winter quarters.

AIDS TO NAVIGATION.

In the light-house establishment urgent recommendations are made for the erection of aids to navigation in the ninth, tenth and eleventh districts. These estimates, together with the comments of the Secretary of War as to the necessities of each case, are as follows:

Ninth District—Establishing a fog signal at Grand Traverse (cat head) light-station, Lake Michigan, Mich., \$5,500. The establishment of a fog signal is deemed necessary to the safety of the commerce of the port. It will be located on one of the government piers.

Ludington, light and fog signal station, for a keeper's dwelling, \$4,500. This station consists of two lights and a steam fog signal, but there is no dwelling for the keeper.

Kewaunee, Wis., light and fog signal station, for a double keeper's dwelling, \$7,500. This station consists of a light and steam fog signal, but there are no keepers' dwellings.

Portage Lake, Michigan, light-station, for a keeper's dwelling, \$3,500. This station consists of two lights on the government pier, but there is no dwelling for the keeper.

Depot for the ninth and eleventh light-house districts, Michigan, establishing a light-house and buoy depot at or near Cheboygan, Lake Huron, Mich., \$15,000. The depot for the ninth light-house district is at the southern end of Lake Michigan at St. Joseph, while the depot for the eleventh light-house district is at Detroit. A depot is needed in the vicinity of the Straits of Mackinac for the storage of coal, buoys and other material, and heavy supplies needed for use in the many light-houses in the vicinity, and as a winter harbor for four light-vessels stationed near.

Tenth District—For building a dwelling for the keeper of Grassy Island range, Ecorse, Mich., \$5,000. The lights of this range are located on the flats in the water, about three and a half feet deep in front of a wide marsh. The keeper should live at the station. This is indispensable to the proper care of the lights. The bottom, however, is so soft that a secure foundation can only be had on piles protected with rip-rap stone.

Building a light-keeper's dwelling at Grosse Isle, north channel, range light station, Mich., \$3,500. The houses near the light station are almost exclusively owned and occupied by summer residents. There is no house in which a keeper can live within reasonable distance. The building of a dwelling is essential to the proper maintenance of the light.

Building a dwelling for the light-keeper at Grosse Isle, range light-station, Detroit river, Mich., \$5,000. The light-keeper is now living in a dwelling belonging to the service on Mama Juda Island, which is on the opposite side of the channel, at quite a distance from his station. This is not only inconvenient, but dangerous. A house should be provided for the keeper on Grosse Isle, that he may not have to leave the island.

Light-vessel and two float lights for marking the new channel at Ballard's Reef, above Limekiln crossing, on the lower Detroit river, \$1,500. It is proposed to establish here a small light-vessel, similar to the one already on Ballard's Reef, together with two small float lights, one north and one south of the vessel, to take the place of floats now maintained by the Lake Carriers' Association. They can be cared for by the crew of the vessel itself.

Establishing a new depot for the tenth light-house district. The present depot at Buffalo is very small, and badly located. It is useless as a winter harbor for light-house vessels. Hence, those belonging to the district are laid up at the depot of the eleventh light-house district at Detroit. The limited accommodations at Detroit are fully required by the tenders and light vessels of that district. Matters have recently become more serious by the work of re-opening the channel to Buffalo, which has caused a movement and settlement of the wharf and keeper's dwelling at the Buffalo depot, and which may make its abandonment at an early day necessary. Authority is asked to sell the Buffalo light-house depot site and to use so much of the proceeds thereof as may be necessary to establish a depot for the tenth light-house district at some point to be hereafter selected by the Light-House Board.

Eleventh District—Completing the work of moving and re-building the main La Pointe light and establishing a harbor bell and light at or near Chequamegon Point, Lake Superior, Wis., \$1,500. It has not been

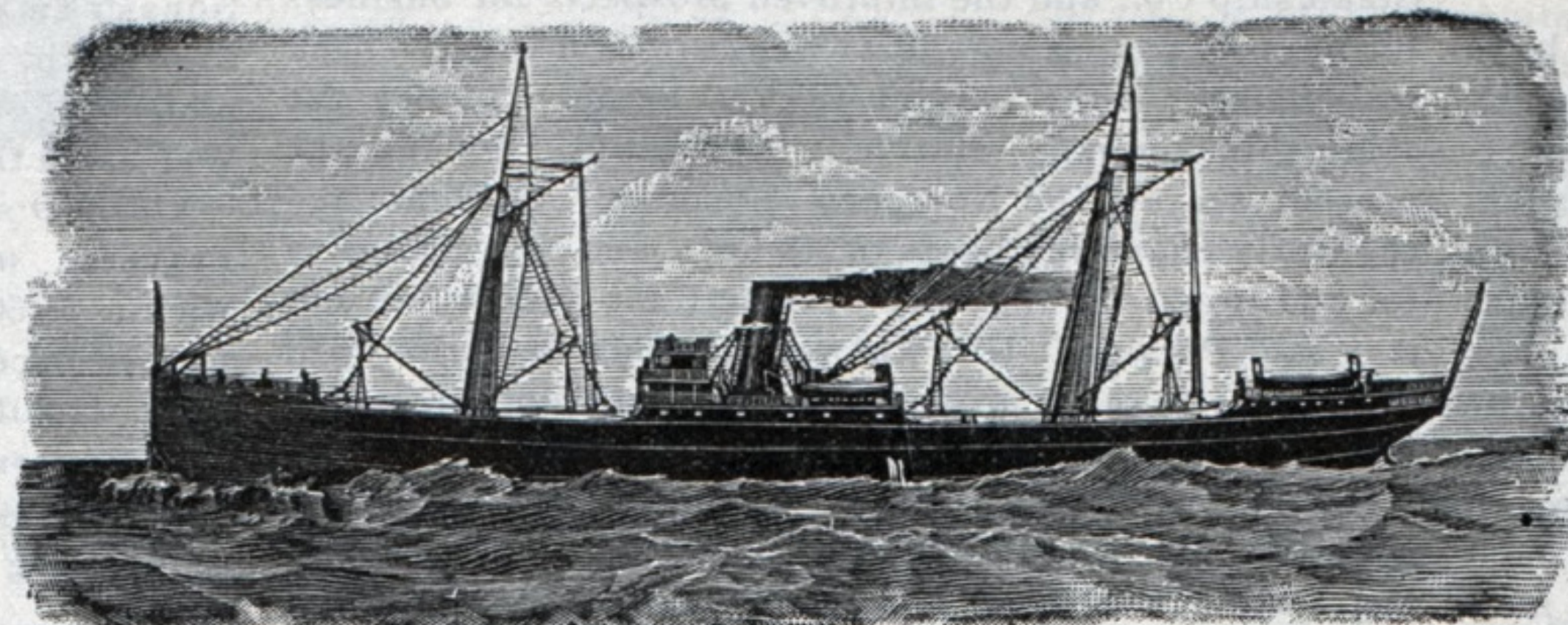
SCOTT'S NEW 1896
COAST PILOTFOR THE LAKES
PRICE \$1.50.

FOR SALE BY

THE MARINE RECORD,

WESTERN RESERVE BLDG., CLEVELAND.

F. W. WHEELER & COMPANY,



BUILDERS OF ALL KINDS OF

IRON, STEEL AND
WOODEN SHIPS,
FOR LAKE OR OCEAN SERVICE.

West Bay City, Mich.

F. W. WHEELER, Prest. E. T. CARRINGTON, V.-Prest

C. W. STIVER, Secretary & Treasurer.

FRONTIER IRON WORKS,
MARINE ENGINES,
DETROIT, MICH.

INCORPORATED 1794

Insurance Company of North America.

CAPITAL, PAID UP IN CASH, - - - \$3,000,000.00
ASSETS, - - - 9,487,673.53

CHARLES PLATT, President.

GEORGE H. McFADDEN, Vice President.

EUGENE L. ELLISON, 2d Vice President.

GREVILLE E. FRYER, Sec'y and Treas.

JOHN H. ATWOOD, Assistant Secretary.

LAKE MARINE DEPARTMENT, GEORGE L. MCCURDY, MANAGER.
CHICAGO, ILL.

MARINE AND INLAND INSURANCE.

Atlantic Mutual Insurance Co.,

Organized 1842. Office 51 Wall Street, NEW YORK.

Insures against Marine and Inland Transportation Risks and Issues Policies
making Loss Payable in England.

Assets over \$10,000,000 for the Security of its Policies.

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

J. D. JONES, Pres. W. H. H. MOORE, Vice Pres. A. A. RAVEN, 2d Vice Pres. J. H. CHAPMAN, Sec.

found practicable to complete the important improvements at this station as directed by the act of March 2, 1895, within the limits of the appropriation of \$10,000 made for the purpose.

Lake St. Clair, Mich., light and fog signal stations to mark the new twenty-foot channel, \$20,000. This channel has recently been opened by the government at great expense, and it should now be properly marked to render it available to vessels at all times and during all conditions of weather.

Establishing a light and fog signal station on Middle Island, Lake Huron, Mich., \$25,000. This station is now rendered necessary both in order to make available the harbor of refuge behind Middle Island, the only one in the vicinity having sufficient depth of water for the modern deep-draught lake vessels, and to mark a turning point in the regular course of vessels bound up or down the coast.

Establishing a light to mark the turning point in the channel through Mud Lake, St. Mary's river, Mich., \$3,500. This important turning point is now marked only by a buoy and distant range lights on shore. They are not effective guides.

Establishing an additional set of range lights to mark the channel at the entrance to St. Mary's River, \$1,000. These lights are to replace two lights now maintained at private expense.

Establishing a fog signal at Portage river light-station, near the mouth of Portage river, western shore of Keweenaw Bay, Lake Superior, Mich., \$5,500. The coast light which marks the approach to Portage river ship canal is amply sufficient in clear weather. During a fog the light is of little avail. A fog signal is absolutely necessary to guide vessels into Portage lake ship canal during thick or foggy weather.

Establishing a light and fog signal station at or near Crisp's Point, Lake Superior, Mich., \$18,000. This is a dangerous point for vessels bound down the lake in thick weather. These vessels all try to make Whitefish Point, but a slight variation in their course from the nearest point of departure will run them ashore near Crisp's Point. Several wrecks have occurred here.

Constructing a light and fog-signal station on the Rock of Ages, off the western end of Isle Royale, Lake Superior, Mich., \$50,000. During the season of south-westerly and westerly winds, many vessels bound to and from Duluth, by taking a course along the north shore of the lake and in lee of Isle Royale, are enabled

to run when the lake is too rough for the more southerly course. A light and fog signal on the dangerous rocks off the west end of Isle Royale would be a valuable aid for these vessels.

The reef light-ship Straits of Mackinac, Mich., constructing, equipping and outfitting complete for service a steam light-vessel with steam fog signal, \$15,000. The entire commerce of the Straits of Mackinac, said in 1890 to amount to 11,222,000 tons of freight, passes dangerously near this reef. It will cost much less to place a light-ship here which can be removed at the close of navigation.

A cheaply built vessel, which is needed elsewhere, is maintained at Poe Reef pending the passage of this act, which was authorized by the act approved on February 15, 1893.

Establishing a small inexpensive light-vessel off Martin's Reef, north-western end of Lake Huron, \$15,000. This light-vessel is needed as an aid to the commerce between the mouth of the St. Mary's river and the Straits of Mackinac. The course of vessels running between these points takes them close to the reef, and being unmarked it is a distinct danger.

Grand Marais harbor of refuge light station, Lake Superior, Mich.—Authority is asked that the unexpended balance of the \$15,000 appropriated by the act of March 2, 1895, for "A light and bell" at this place, or so much of it as may be necessary, be made available for constructing an additional light on shore to serve as a range and a keeper's dwelling, and completing the station. The light and bell has been constructed at a cost of \$2,785.75. The appropriation was evidently intended for a complete station, but the wording of the act is ambiguous.

The Secretary of War states that with regard to the improvement of the ship channel connecting the waters of the Great Lakes between Chicago, Duluth and Buffalo, it is not practicable at this time to say how much money can be advantageously expended in the fiscal year 1898. The appropriation for the current year is \$500,000, and the estimate to complete the work is \$1,090,000. No appropriation is asked to continue the improvement of water communication across Keweenaw Point, but, \$400,000 will ultimately be required for the purpose.

Under the head of the life saving service the following appropriations are asked: Salary of one superintendent for the life-saving and life-boat stations on the

coasts of Lake Ontario and Lake Erie, \$1,800; salary of one superintendent for the life-saving and life-boat stations on the coast of Lakes Huron and Superior, \$1,800; salary of one superintendent for the life-saving and life-boat stations on the coast of Lake Michigan, \$1,800.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD by George F. Stone, Secretary Chicago Board of Trade, December 5, 1896:

| CITIES WHERE STORED. | WHEAT Bushels. | CORN Bushels. | OATS Bushels. | RYE Bushels. | BARLEY Bushels. |
|------------------------------|----------------|---------------|---------------|--------------|-----------------|
| Albany..... | | 50,000 | 125,000 | | 20,000 |
| Baltimore..... | 388,000 | 1,438,000 | 1,388,000 | 100,000 | |
| Boston..... | 1,636,000 | 511,000 | 190,000 | | |
| Buffalo..... | 2,972,000 | 531,000 | 405,000 | 159,000 | 1,424,000 |
| afoat..... | 14,051,000 | 4,606,000 | 3,558,000 | 947,000 | 23,000 |
| Chicago..... | | | | | |
| afoat..... | 1,000 | 1,000 | 15,000 | 5,000 | 53,000 |
| Cincinnati..... | 406,000 | 22,000 | 30,000 | 9,000 | 35,000 |
| afoat..... | 2,007,000 | 3,000 | 168,000 | 314,000 | 88,000 |
| Duluth and Superior..... | 150,000 | | | | |
| afoat..... | 197,000 | 140,000 | | | |
| Indianapolis..... | 471,000 | 19,000 | 162,000 | 9,000 | |
| Kansas City..... | 368,000 | 3,000 | 6,000 | 132,000 | 95,000 |
| afoat..... | 18,153,000 | 9,000 | 537,000 | 24,000 | 37,000 |
| Minneapolis..... | 447,000 | 35,000 | 91,000 | 21,000 | 33,000 |
| Montreal..... | 7,388,000 | 6,631,000 | 3,476,000 | 486,000 | 1,842,000 |
| New York..... | 887,000 | 363,000 | 171,000 | 56,000 | 297,000 |
| afoat..... | 60,000 | 22,000 | | | 160,000 |
| Peoria..... | 180,000 | 144,000 | 377,000 | 2,000 | 15,000 |
| Philadelphia..... | 995,000 | 1,209,000 | 177,000 | | |
| St. Louis..... | 2,438,000 | 345,000 | 71,000 | 61,000 | 17,000 |
| afoat..... | 61,000 | | | | |
| Toledo..... | 1,060,000 | 309,000 | 463,000 | 94,000 | |
| afoat..... | 178,000 | | 63,000 | | 75,000 |
| Toronto..... | | 30,000 | | 45,000 | 40,000 |
| On Canal..... | 1,824,000 | 798,000 | 823,000 | | 580,000 |
| On Lakes..... | 55,000 | 125,000 | 1,000 | | |
| On Mississippi..... | | | | | |
| Grand Total..... | 56,312,000 | 17,405,000 | 12,297,000 | 2,464,000 | 4,834,000 |
| Corresponding date 1895..... | 63,786,000 | 5,207,000 | 6,011,000 | 1,852,000 | 4,754,000 |

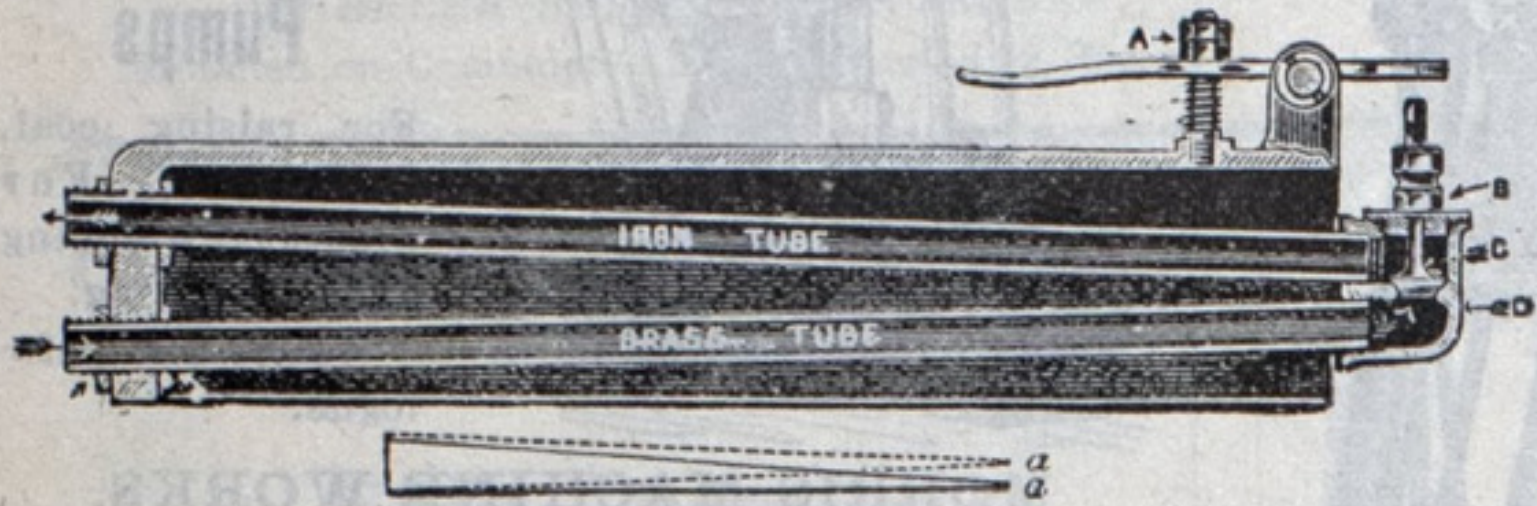
TRADE NOTE.

GEORGE FOCHT, 105 to 123 Adams street, Brooklyn, N. Y., has issued a complete catalogue of his self-acting apparatus for handling and conveying coal and other materials. He is the inventor and manufacturer of self-dumping and self-righting tubs, self-acting side-dump cars, automatic bottom-dump cars, universal ball-joint dock block, iron tray wheel barrows with hollow dished front, ore and coke barrows, screens, etc. The catalogue referred to is illustrated, and will be found valuable as a reference book. A copy can be had, by any one interested, on application.

GEIPEL STEAM TRAP.

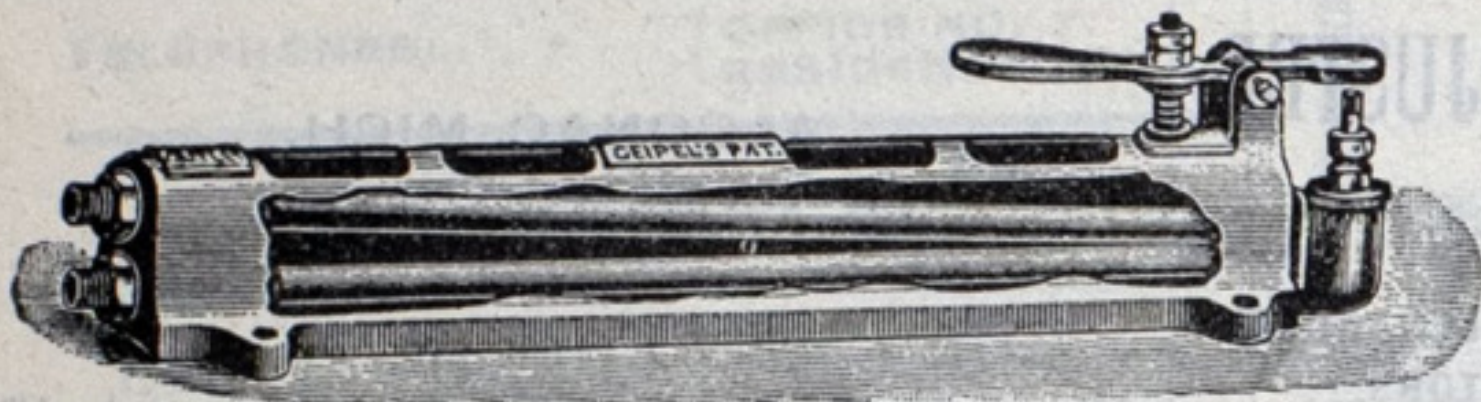
We illustrate a new form of steam trap which has some special features of interest, and which has found great favor among the leading ship and engine builders in Great Britain. It has been used abroad by such well known marine firms as Earle's Ship Building Co. Ltd., Wigham, Richardson & Co., Laird Bros., Jno. I. Thornycroft & Co., Yarrow, and many others.

From the illustration it will be seen that there are no internal levers or working parts boxed in and exposed to the action of steam and water; that it will work equally well on cylinder or steam pipe, and in any position; there are no faced joints to maintain steam tight; the valve is always open to atmosphere, except



when steam is passing, therefore water drains away from steam pipes as fast as it collects, even before steam is turned on; the valve can be opened by hand to blow through, and it can be left open if desired; it can be easily examined and replaced, the operation occupying two minutes; it is compact and suitable for fixing on wall of boiler room, or on bed-plates of engines without disfiguring same.

The particular form in which the expansion parts are arranged, viz., that of an isosceles triangle, causes a



considerable motion to be imparted to the apex for very small changes in the length of these parts; and in the second place there is a certain amount of elasticity to the pipes.

The trap may be conveniently fixed on the engine columns or bulkheads, vertical or otherwise, and drains the main steam pipe, the valve casings, the steam jackets, if any, or branch pipes to auxiliary engines,

keeping these important parts clear of water without the loss of dry steam.

British engineers claim that there is distinct economy in steam and also in packing where this steam trap is used. The trap is adjusted by screwing down on the nut A on the lever until the steam blows through, then slack back until the steam is shut off, and lock the nut. The trap will then only discharge water.

When fixing to new steam pipes it is well to blow through the connection to the trap before the latter is fixed, in order to clear away any dirt in the pipes. If any steam should blow through, the valve should be examined, which may be done by unscrewing the cover B. The valve seat is renewable.

The working of the trap may be seen quickly by throwing cold water over it while steam is on. It is guaranteed by the makers, Messrs. Thorpe, Platt & Co., of 97 Cedar St., New York.

BUFFALO GRAIN TRADE.

The following tables show the grain movement at Buffalo for the month of November, and from the opening of navigation, compared with previous years, as per custom house reports:

| | 1896. | 1895. | 1894. |
|------------------|-----------|------------|-----------|
| Flour, bbls..... | 1,872,524 | 1,507,755 | 1,756,047 |
| Wheat, bu..... | 6,146,064 | 10,107,340 | 6,951,941 |
| Corn, bu..... | 5,937,442 | 4,055,010 | 1,781,710 |
| Oats, bu..... | 3,604,460 | 1,453,638 | 1,682,155 |
| Barley, bu..... | 5,765,183 | 2,811,980 | 2,774,073 |
| Rye, bu..... | 429,720 | 232,500 | 130,385 |

Total bu..... 21,882,869 18,660,468 13,320,264

And from the opening of navigation to December 1:

| | 1896. | 1895. | 1894. |
|------------------|------------|------------|------------|
| Flour, bbls..... | 9,245,790 | 7,900,450 | 10,712,557 |
| Wheat, bu..... | 50,716,257 | 39,120,840 | 48,564,971 |
| Corn, bu..... | 44,661,130 | 36,016,790 | 25,330,910 |
| Oats, bu..... | 38,649,383 | 20,825,680 | 14,716,045 |
| Barley, bu..... | 16,084,797 | 6,620,120 | 7,653,643 |
| Rye, bu..... | 4,227,354 | 663,340 | 501,195 |

Total bu..... 154,338,921 103,246,770 96,766,764

TALK about transatlantic liners having become floating hotels, a good evidence is that of the passenger ticket agent who recently adopted the practice of asking his customers: "Do you wish a room with a southern exposure, sir?" To the old windjammers who wouldn't like to promise what sort of exposure their rooms might have before they got across, this sounds good.—Marine Journal.

COMMERCE OF TACOMA.

The following is a condensed statement of the ocean commerce of the port of Tacoma for eleven months of 1896 to December 1st, compiled by the Tacoma Chamber of Commerce and Board of Trade from reports of the harbor master:

| IMPORTS. | VALUE. |
|--|----------------|
| Aggregate value of imports from China, Japan and Europe..... | \$4,732,422.12 |
| EXPORTS. | |
| 2,545,589 bushels wheat..... | \$1,073,367.10 |
| 303,438 barrels flour..... | 904,559.77 |
| 75,991,664 feet lumber..... | 687,713.50 |
| 299,813 tons coal..... | 895,494.00 |
| Merchandise to China and Japan..... | 2,681,412.00 |
| “ “ British Columbia..... | 307,431.84 |
| Total..... | \$7,149,978.21 |
| Same period last year..... | 4,164,584.18 |

Increase over last year..... \$2,985,394.03

Inward registered tonnage, 533,532; inward cargo tonnage, 70,294; outward registered tonnage, 565,649; outward cargo tonnage, 585,607; deep sea arrivals, 393; departures, 374.

WM. WILFORD'S



MATCHLESS WATER-PROOF CANVAS

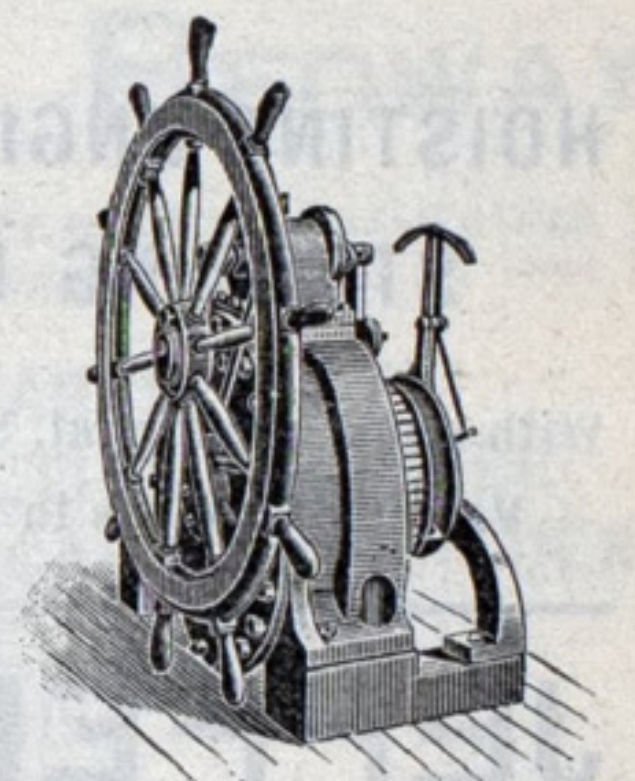
The best in the market for hatch covers, is stronger, lighter, and more durable than any water-proof goods yet produced. It is made of a twisted thread of pure flax which renders it very strong. It will not crack like cotton goods which is a great advantage.

EDWARD A. BUNKER, Room 617 27 and 29 William St., NEW YORK.

QUEEN CITY Hydraulic Steerer.

The best and most powerful Steerer for Tugs, Steamers, Etc.

MANUFACTURED BY QUEEN CITY ENGINEERING CO., BUFFALO, N. Y.



Write for Prices and References.

TOBIN BRONZE.

(TRADE-MARK REGISTERED.)

Tensile Strength, one inch cold drawn rod, upwards of 78,000 lbs. per square inch. Torsional Strength equal to the best Machinery Steel. Non-Corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shafting, Etc. Spring Wire, Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

Ansonia Brass and Copper Co.,

SOLE MANUFACTURERS, SEND FOR PAMPHLET, 19-21 CLIFF ST., NEW YORK.

THE CHASE MACHINE COMPANY.

MACHINISTS, ENGINEERS AND BLACKSMITHS.

MANUFACTURERS OF

Land & Marine Engines & Steam Pumps,

SOLE OWNERS AND MANUFACTURERS OF THE

CHASE AUTOMATIC FOG WHISTLE MACHINE,

IN USE ON NEARLY ALL LAKE STEAMERS.

Agents for ASBESTOS STEAM, BOILER AND PIPE COVERING.

Telephone 994.

111 Elm Street, CLEVELAND, O.

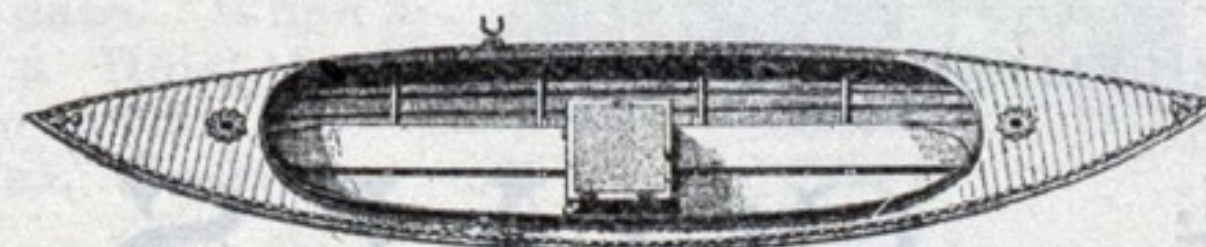
PINTSCH GAS LIGHTED BUOYS.

Adopted by the English, German, French, Russian, Italian and United States Light-House Departments for channel and harbor lighting; over 500 gas buoys and gas beacons in service.

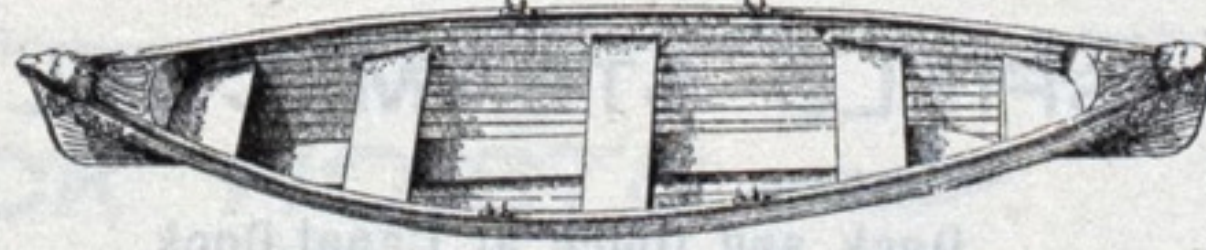
BURN CONTINUOUSLY from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

BRILLIANT AND STEADY ILLUMINATION. ECONOMICAL AND RELIABLE IN OPERATION.

Controlled by the SAFETY CAR HEATING AND LIGHTING CO., 160 Broadway, NEW YORK CITY.



"GET THERE" DUCKING BOAT.



DOUBLE-ENDER PLEASURE BOAT.

NEW YORK, PHILADELPHIA, BOSTON, BALTIMORE, SAN FRANCISCO, NEW ORLEANS.

Johnson & Higgins

..Average Adjusters..

AND

Fire AND Marine Insurance.

SPECIAL FACILITIES FOR PLACING MARINE LINES.

GUARANTY BUILDING, BUFFALO, N. Y.

HAVE NO RIVAL!

in appearance, durability, and staunchness

MULLINS' METAL BOATS

are superior in every way. Need no repairs. Low in cost. Send for catalogue.

W. H. MULLINS, 252 Depot St., Salem, O.

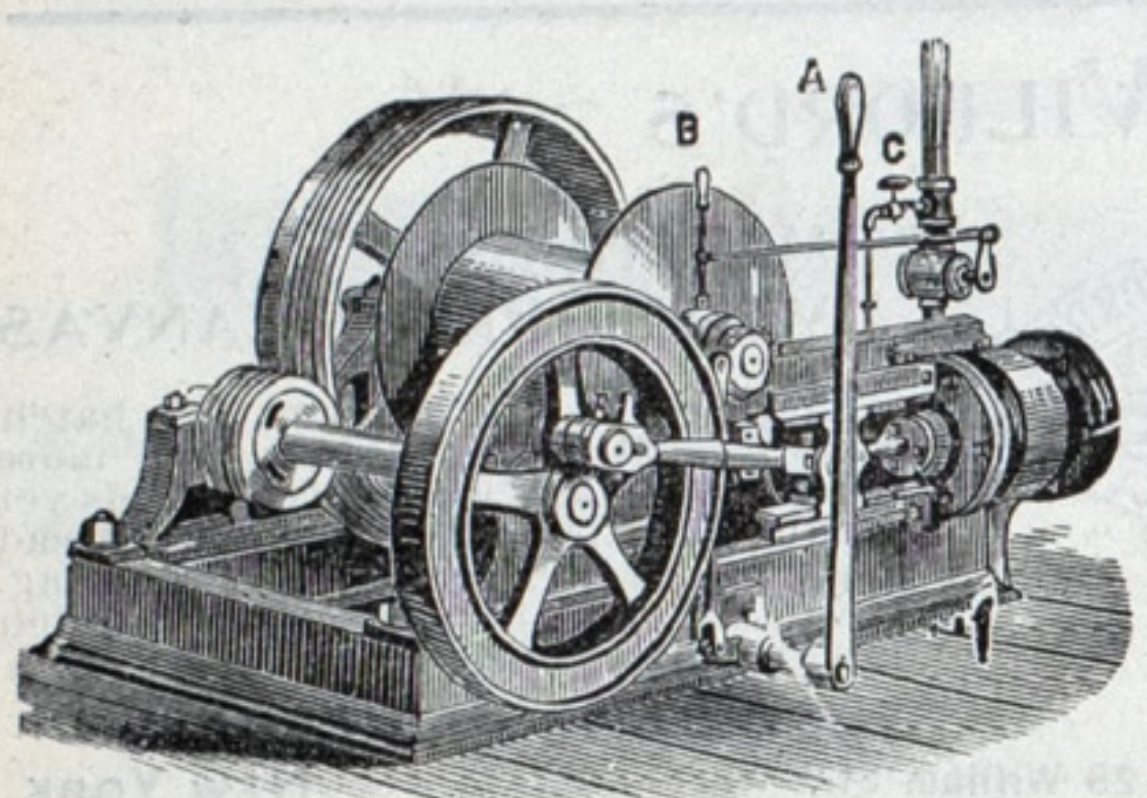
For sale by A. G. SPAULDING & BROS., Chicago, JOHN P. BURKHARD, St. Paul, Minn., SIMMONS HARDWARE CO., St. Louis, Mo., H. C. SQUIRES & SONS, New York, N. Y., SAKS & CO., Washington, D. C.





WILLIAMSON BROS.

Cor. Richmond and York Sts.,
PHILADELPHIA - PA.



HOISTING ENGINES and SHIP STEERING ENGINES.

With either Frictional, Spur or Worm Gear of
Various Patterns to Suit all Purposes.

MONTAGUE IRON WORKS CO.,

ESTABLISHED 1871.

INCORPORATED 1893.

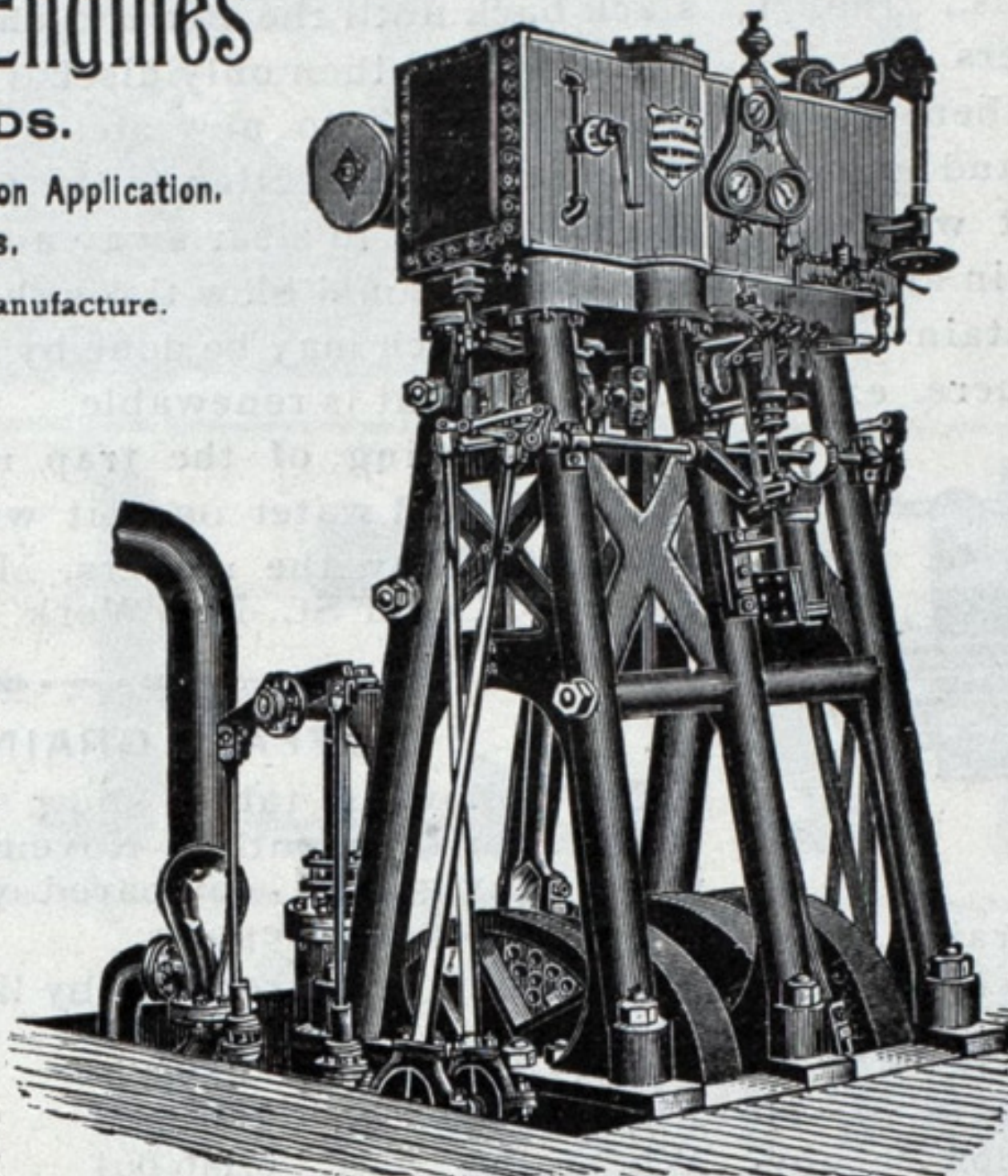
Marine and Stationary Engines

AND BOILERS OF ALL KINDS.

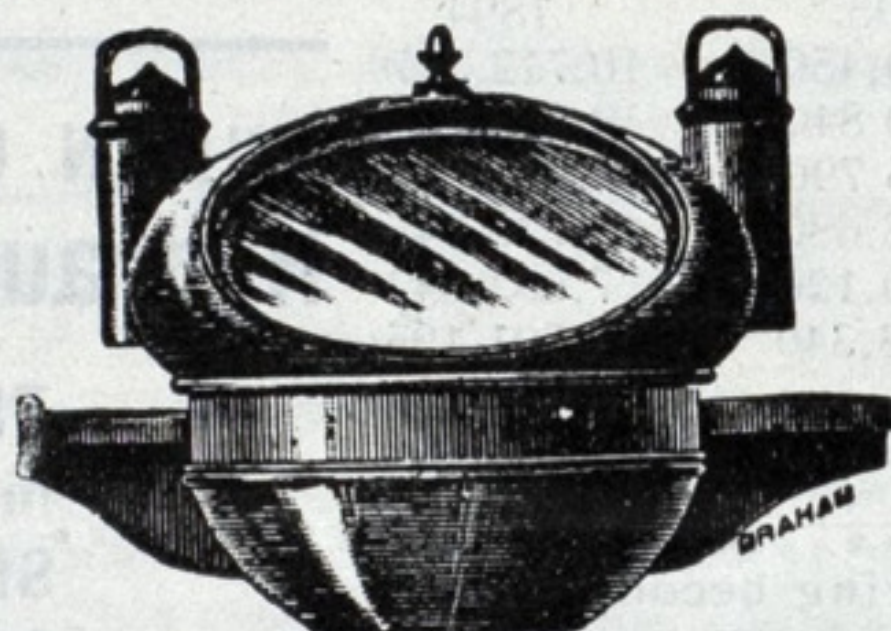
Heavy Castings a Specialty. Prices Quoted on Application.
Fore and Aft Compound Marine Engines.

The Engines in the following boats are of our manufacture.

Tug, Hunter, Chicago, 15 and 28x22.
Tug, Tacoma, Chicago, 16 and 30x24.
Tug, Zenith, Duluth, 18 and 36x30.
Steamer Glenn, South Haven, 14 and 28x20.
U. S. Survey Steamer, W. S. Hancock, 12 and 21x20.
Steamer Pine Lake, Charlevoix, 16 and 30x24.
Passenger Steamer Pilgrim, St. Clair, 14 and 28x20.
Steam Barge Iona, Grand Haven, 24 and 46x42.
Steam Barge M. T. Greene, Chicago, 20 and 36x36.
Steamer H. W. Williams, South Haven, 18 and 36x30.
Steam Barge Mark B. Covell, Manistee, 18 and 30x26.
Steam Barge Isabella J. Boyce, Michigan City, 19 and 32x26.
Steam Barge Luella H. Worthington, Cedar River, 19 and 36x30.
Passenger Steamer City of Kalamazoo, South Haven, 20 and 40x30.
Steamer Oval Agitator, Chicago, 14 and 28x20.
Tug E. G. Crosby, Muskegon, 16 and 30x24.
Tug Peter Coates, Sault Ste. Marie, 10 and 20x16.
Steamer Lorain L. South Haven, 12 and 21x16.
Passenger Steamer Lotus, Escanaba, 16 and 30x24.
Steam Barge Sachem, Grand Haven, 21 and 38x36.
Passenger Steamer Bon Ami, Saugatuck, 14 and 28x20.
Steam Barge Charles A. Street, Chicago, 20 and 36x36.
Steam Barge Edward Buckley, Manistee, 18 and 36x30.
Passenger Steamer E. G. Maxwell, Pentwater, 14 and 28x20.
Passenger and Freight Steamer Bon Voyage, Saugatuck, 16 and 30x26.
Passenger and Freight Steamer Mabel Bradshaw, Muskegon, 16 and 28x26.
The engraving represents our 20 and 36x36 Fore and Aft Compound Marine Engine. We build them all sizes and guarantee them to give satisfaction. Prices furnished on application.



MONTAGUE IRON WORKS CO., Montague, Mich.



FRANK MORRISON, COMPASS ADJUSTER

—AND MANUFACTURER OF—

NAUTICAL INSTRUMENTS.

COMPASSES. BAROMETERS. PATENT LOGS. BINNACLES. STEAM
GAUGES. MARINE GLASSES. ENGINE INDICATORS.

All Nautical Instruments Carefully Repaired.

Office with Upson, Walton & Co., 161 River St., Cleveland, O.

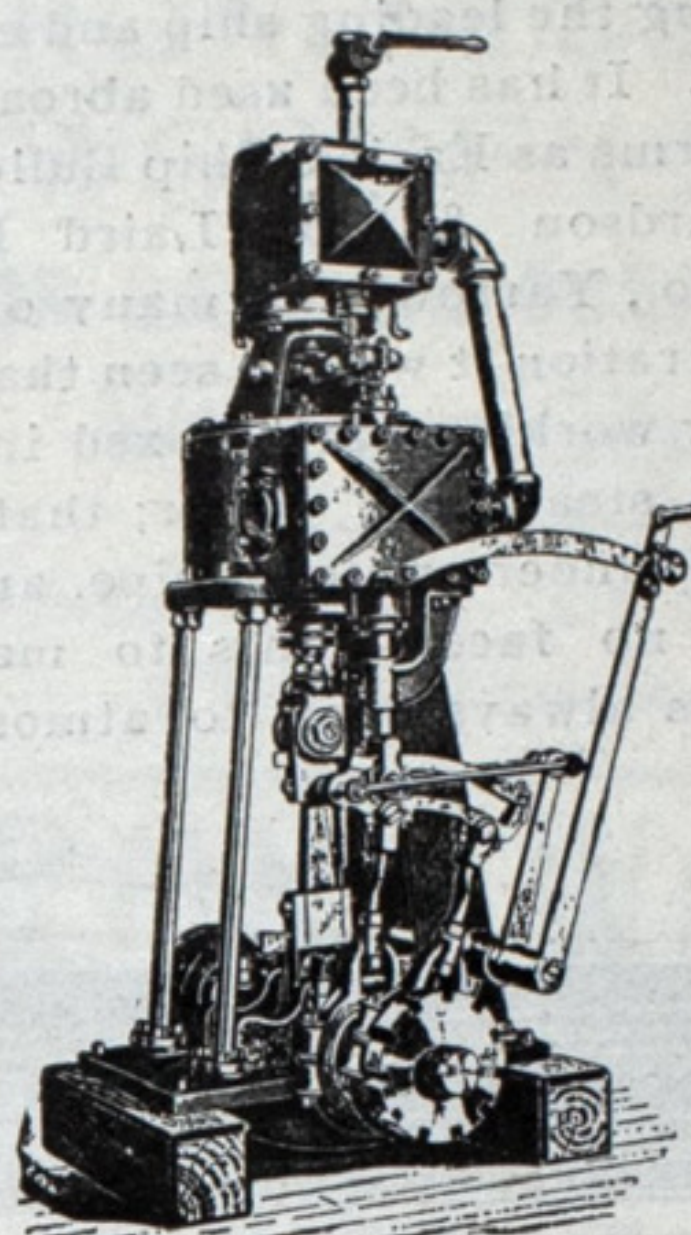
MARINE ENGINES

SINGLE
AND COMPOUND.

5 TO 200 HORSE-
POWER. These en-
gines are high-class
in workmanship
and material and
moderate in price.
Send for cuts, des-
cription and prices.

Centrifugal Pumps

For raising coal,
sand, &c. For
dredging, wrecking
and circulating.
Write for cata-
logue.



MORRIS MACHINE WORKS,

Baldwinsville, N. Y.

HENION & HUBBELL, Agents,

61-69 North Jefferson St., Chicago, Ill.

ABRAM SMITH.

ANGUS H. SMITH.

ABRAM SMITH & SON,

SHIP-BUILDERS,

ALGONAC, MICH.

Wooden Ships of any description built
rebuilt, or repaired.

Send for specifications, prices, etc.
Good slips for laying up boats.

JEFFERY'S MARINE GLUE

Can be Obtained from the Following Well-known Firms

L. W. Ferdinand & Co., Boston, Mass.
Howard H. Baker & Co., Buffalo, N. Y.
Geo. B. Carpenter & Co., Chicago, Ill.
H. D. Edwards & Co., Detroit, Mich.
Upson-Walton Co., Cleveland, O.
M. I. Wilcox Cordage and Supply Co., Toledo, O.

Send for Circulars and Samples.

THE W. L. SCOTT CO.

WHOLESALE DEALERS IN

SHAMOKIN. WILKESBARRE,
AND HAZLETON LEHIGH

COALS

...MANSFIELD STEAM COAL

Fueling Steam Vessels a Specialty.

Dock and Office at Canal Dock.

Either from Dock or Steam Scow Mansfield, capacity 300 tons,
in buckets, which gives quick dispatch. Boats coaled day or night.
Docks lighted with electricity and equipped with Steam Derricks.

ERIE, PA.

The CUDDY-MULLEN COAL CO., Cleveland

DEALERS IN BEST GRADES
OF STEAM COAL.

SPECIAL
ATTENTION
GIVEN TO
STEAMBOAT
FUELING.

SHIPPING DOCK with Car Dumping Machine, also eight chutes
holding 100 tons each, for Rapid Fueling within Eastern
Arm of Breakwater, Cleveland.

Steam Lighters Carrying Derricks and Large Buckets in
operation day and night within Cleveland Harbor.

Pocket dock at Sandwich on Detroit River, formerly
owned by Mullen & Gatfield.

Pocket dock now under construction on Sault River.

Main Offices, Perry-Payne Bldg., Cleveland, O. Telephone No. 8.

RIVER DOCK, West River Street. Telephone 1441.

For Sale

The Steamer Allie E. Shipman.

Forty gross tons. Dimensions—61 feet
keel, 14 ft. 4 in. beam and 5 ft. 6 in. depth
of hold, 12 square high-pressure engine.
Scotch type boiler, allowed 125 pounds
pressure. Boat built at Manitowoc in
1892. She is housed and licensed to carry
45 regular passengers, and has an excursion
permit to carry 125 passengers.

Will sell or trade this boat for some-
thing larger. Now lying at Escanaba,
Mich. For further particulars apply to

J. B. MORAN, Mgr.
Escanaba & Gladstone Transp. Co.
ESCANABA, MICH.



Handicapped

SOME BOATS ARE BADLY HANDICAPPED
FOR WANT OF THE RIGHT KIND OF

FUEL

We have the right kind at our Amherstburgh Dock, and will take good care of
your wants if you will give us a chance.

O. W. SHIPMAN,

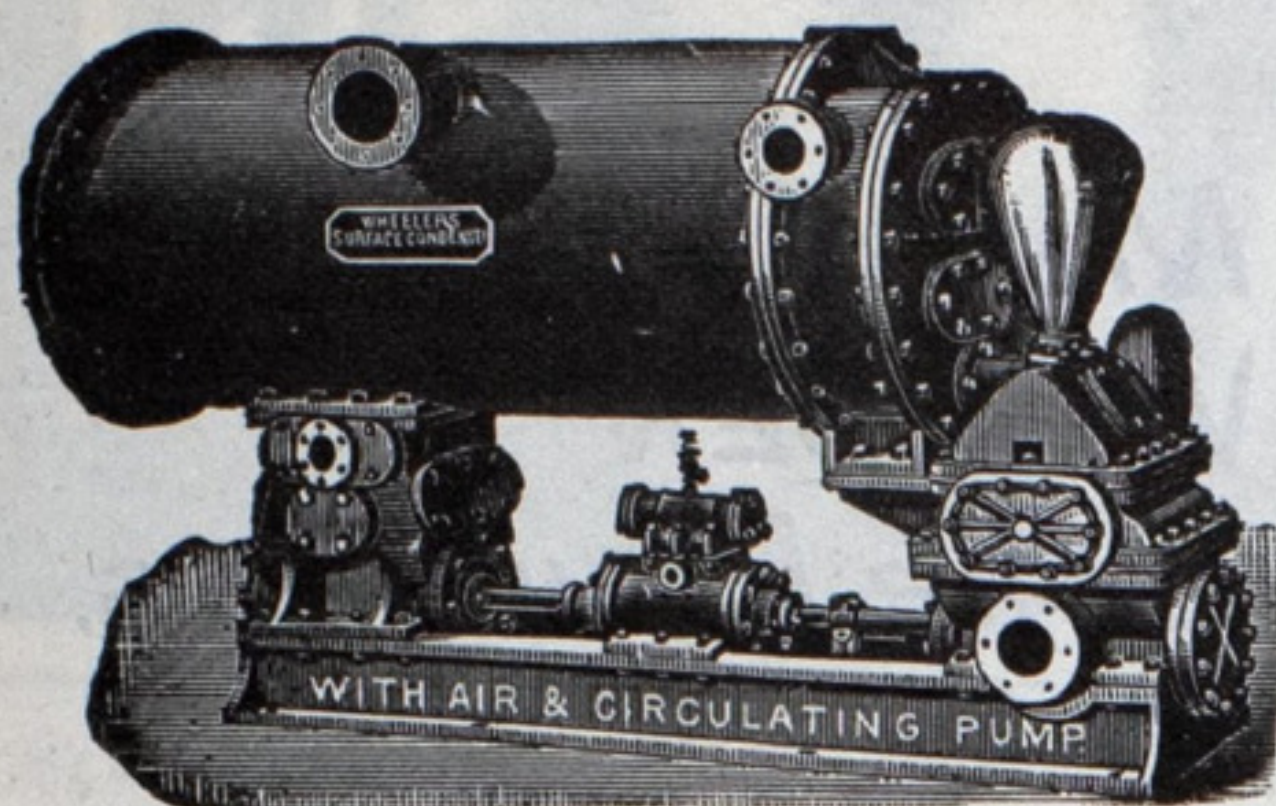
Office, 90 Griswold Street, DETROIT, MICH.

Wheeler Condenser & Engineering Co.,

39 & 41 CORTLANDT STREET, NEW YORK.

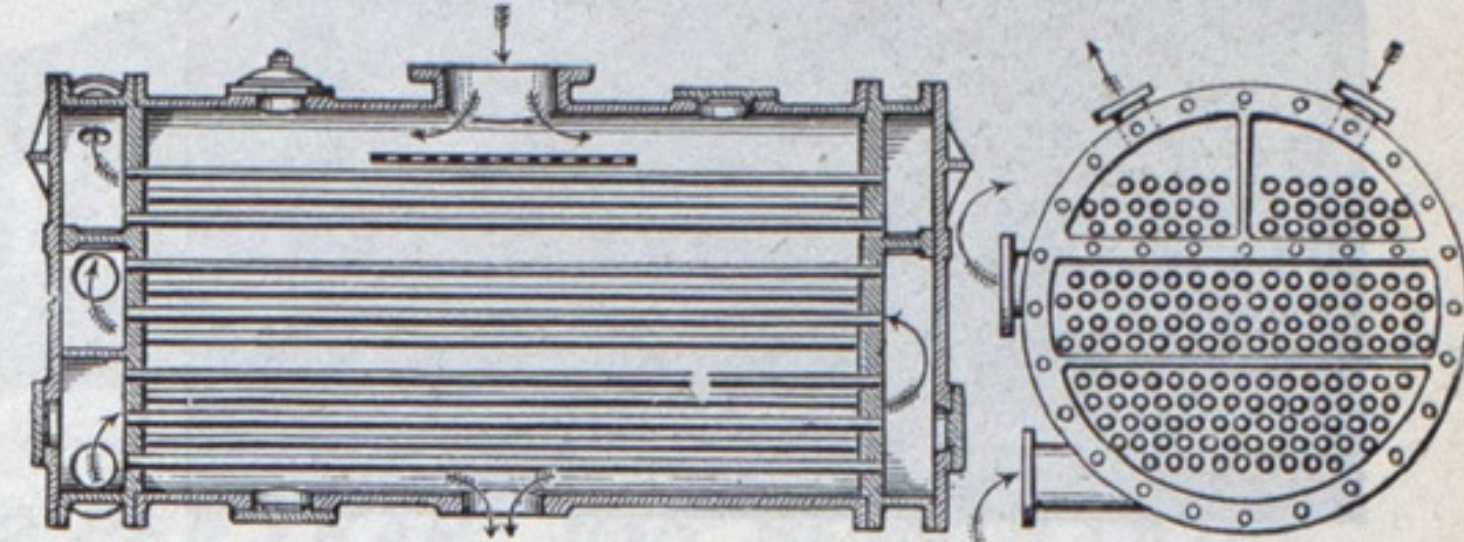
WHEELER'S IMPROVED SURFACE CONDENSERS

Mounted upon Combined Air and Circulating Pumps.

WHEELER SURFACE CONDENSER,
Mounted on Combined Air and Circulating Pumps.

Sole Proprietors and Manufacturers of the
WHEELER STANDARD SURFACE CONDENSER.
WHEELER ADMIRALTY SURFACE CONDENSER.
WHEELER LIGHT HALL SURFACE CONDENSER.
VOLZ PATENT COMBINED SURFACE CONDENSER AND
FEED-WATER HEATER.
WHEELER FEED-WATER HEATER, AIR AND CIRCULATING
PUMPS.
EDMISTON PATENT FEED WATER FILTER.

Send for Pamphlet, "Machinery for Small Boats, etc."

PATENT COMBINED SURFACE CONDENSER AND
FEED-WATER HEATER.

P. M. CHURCH & CO.

SAULT STE. MARIE, MICH.

*Ship Chandlery,
Hardware,
Paints, Oils,*

And all classes of

VESSEL SUPPLIES.

Coppersmith Shop in connection.

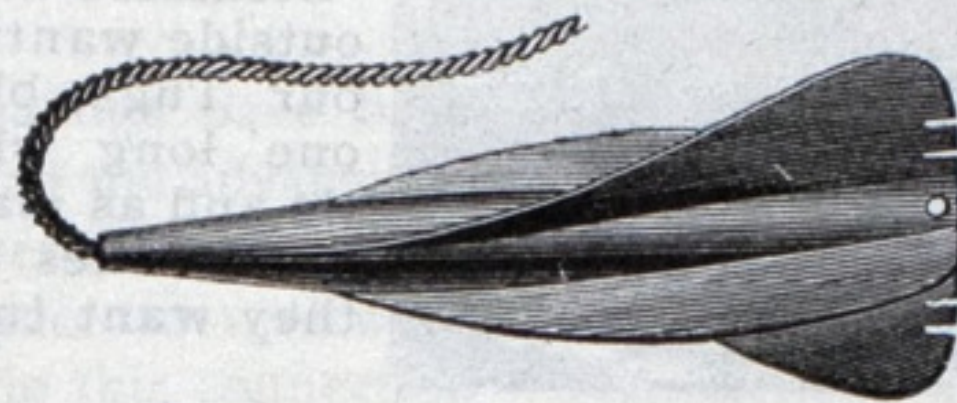
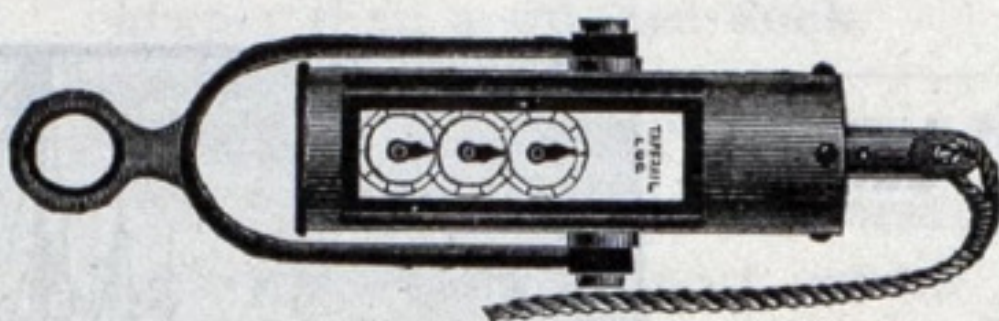
Corner Portage and Ashmun Sfs.

TELEPHONES: - OFFICE NO. 7.
RESIDENCE NO. 4.

PROPOSALS.

OFFICE OF THE LIGHT-HOUSE BOARD,
Washington, D. C., December 1, 1896.
Sealed proposals will be received at this
office until Wednesday, the 30th day of
December, 1896, for furnishing the ma-
terials and labor of all kinds necessary
for the construction, equipment and de-
livery of three first-class composite light-
vessels and two steam tenders. Bids
will be received for each vessel or class
of vessel separately, or for all five of the
vessels, all to be delivered on the At-
lantic coast. An alternate bid will be
received for one of the three light-ves-
sels, to be delivered at San Francisco,
Cal. The said vessel or vessels must be
completed and delivered within ten cal-
endar months from date of the approval
of the contract by the Secretary of the
Treasury, and bidders are informed that
because of the urgent need of the speedy
delivery, the element of time to be con-
sidered in determining the award
of the contract, and in each case the con-
tract will be awarded to the lowest best
responsible bidder. Each proposal must
be accompanied with a certified check
payable to the order of the Secretary of
the Treasury, in the sum of five thousand
dollars (\$5,000). The certified check of
the successful bidder will be retained
until the execution of a formal bond or
contract, and the approval of the same
by the Secretary of the Treasury, and
the certified checks of the unsuccessful
bidders will be returned immediately
after the proposals of the successful bid-
der have been accepted. Forms of pro-
posals, plans and specifications showing
what is required, can be had or seen by
applying to this office. The right is re-
served to reject any or all bids and to
waive any defects. JOHN G. WALKER,
Rear Admiral, U. S. N., Chairman.

...The Bliss Taffrail Log



Over 11,000 sold.
A portion are now made to indicate
Statute Miles
For use on the lakes.

Send us your old Bliss Register and we will alter it
to indicate statute miles for \$3.50.
There are poorly made imitations of our rotator.
Buy only the Bliss Adjustable Rotator, stamped
our name and patents. For sale by Ship Chandlers.

JOHN BLISS & CO.

128 Front Street, NEW YORK

EIGHT ELEGANT PHOTOGRAVURES

—SIZE, 10 x 17 INCHES.

Whaleback Steamer Christopher Columbus,
STATE OF OHIO—STATE OF NEW YORK,
Steel Ship Builders,
Steamer ARTHUR ORR,
English-Built Steamer TURRETT,
Dry-Dock Representatives,
Schooner JOHN FITZPATRICK.

Complete set mailed to any address on
receipt of 25 cents.

THE MARINE RECORD,

Western Reserve Bldg.,

CLEVELAND, O.

W. E. REDWAY,

(Elected Member of the Institution of
Naval Architects at London in 1884.)

NAVAL ARCHITECT,
CONSULTING ENGINEER,
PRACTICAL SHIPBUILDER
IN STEEL, COMPOSITE
OR WOOD.

ALL KINDS OF VESSELS DESIGNED.

Inspection and valuation of repairs
made. Construction of new, and repair
of damaged vessels superintended. Sur-
veys, estimates and specifications fur-
nished promptly.

342 Swan St., - BUFFALO, N. Y.

U. S. Hydrographic Office Charts
BOOKS OF SAILING DIRECTIONS, ETC.

Are for sale at the office of

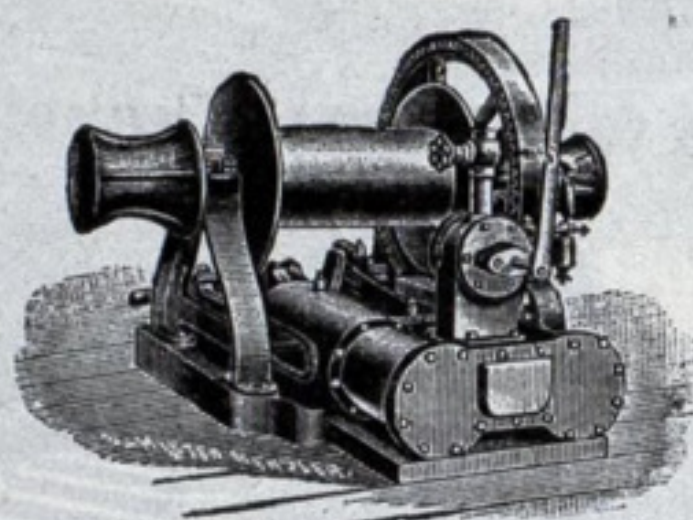
THE MARINE RECORD,

Western Reserve Bldg., CLEVELAND, O.

Ask agents of the Nickel Plate Road
for full information about the Home-
seekers' Excursions to points in the
Northwest, West, Southwest and South,
on November 16, 17 and 30; December 1,
14 and 15. 386-50

HOMESEEKERS' EXCURSIONS

Via the Nickel Plate Road, November
16, 17 and 30; December 1, 14 and 15. Low
rates to points in the Northwest, West,
Southwest and South. 385-50



Dock and Deck Hoists.

ALL KINDS OF

Machinery and Friction Hoists.

JACKSON & CHURCH, Saginaw, Mich.

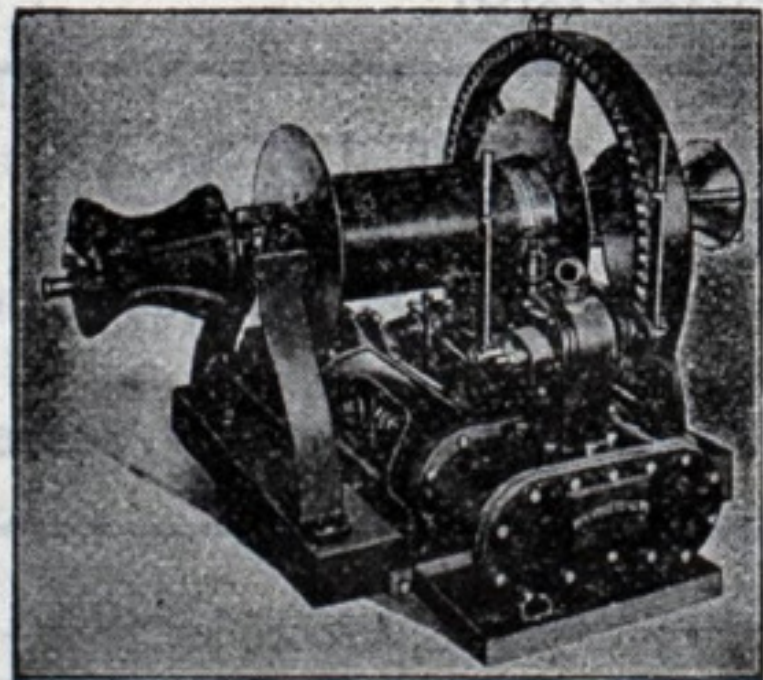
Send for Prices
and Circulars.

HOISTING ...ENGINES

marine work, dock work, mining or any other pur-
pose, kindly permit us to name you prices. We know
we can please you.

MARINE IRON CO.,

- - BAY CITY, MICH.



DECK HOISTS

Coal and Contractors' Hoists,
Steam Steering Gears and
Conveying Machinery
For all Purposes.

MANUFACTURED BY
WRITE FOR PRICES.

W. H. WHITEMORE,

WEST BAY CITY, MICH.

J. J. KEENEN, RIVERSIDE STEAM BOILER WORKS.



Marine, Locomotive and Stationary Boilers.

Marine Work a Specialty.

SHEET IRON WORK OF ALL KINDS.
REPAIRING PROMPTLY ATTENDED TO.

Office and Works, Cor. Cologne and Fuller Streets,

Telephone, Canal 401

CHICAGO.

J. H. OWEN, Prest., Chicago. F. H. VAN CLEVE, Sec'y, Escanaba. Capt. GEO. BARTLEY, Supt., Escanaba.

ESCANABA TOWING & WRECKING CO., Escanaba, Mich.

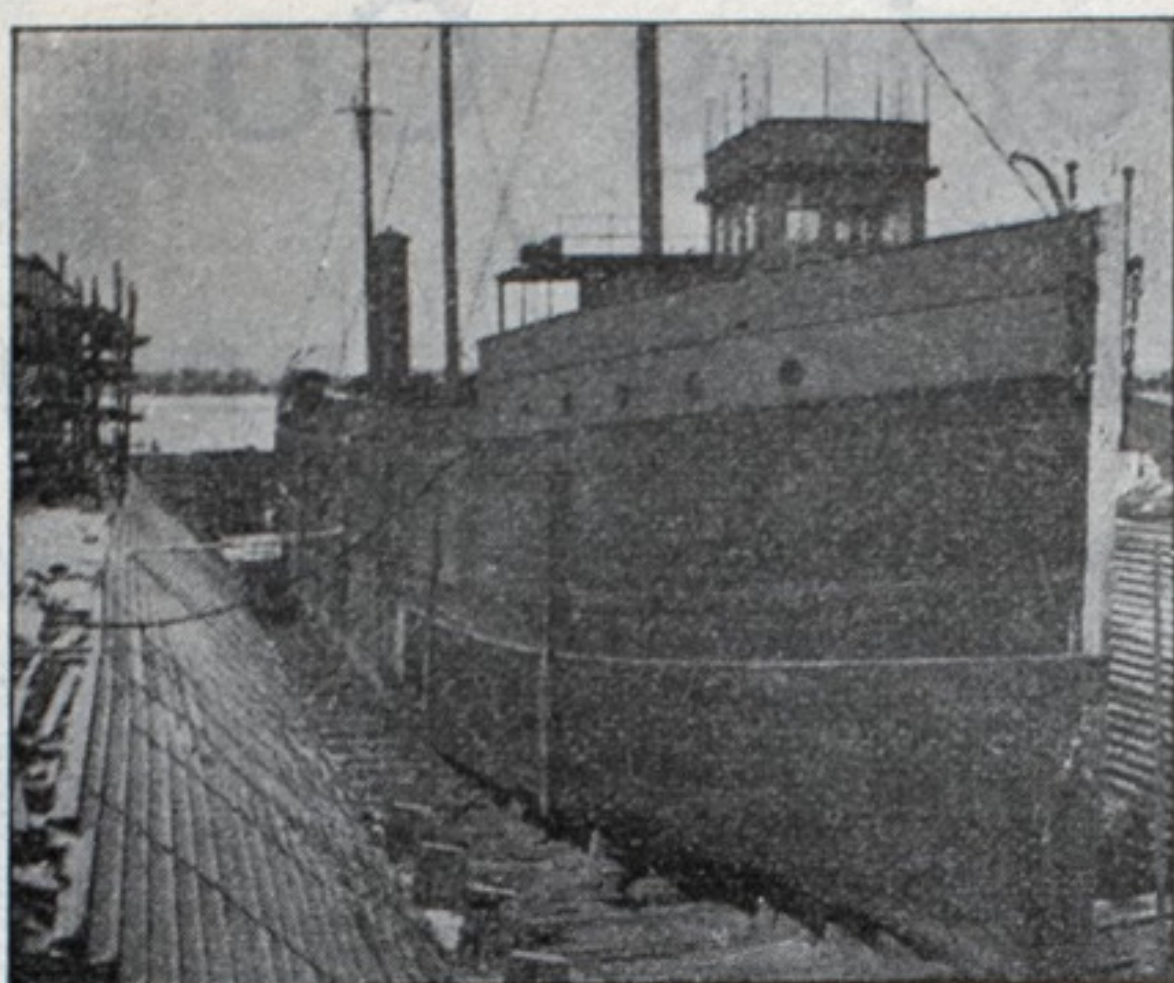
Tugs, Lighters, Steam Pumps, Hawsers, Hydraulic Jacks and Diving Appliances always ready

TUG MONARCH—Engine Compound, Cylinder 16 & 30 in. diameter, 30 in. Stroke, Steam Pressure allowed, 125 lbs.
TUG DELTA—Cylinder 20 by 22, Steam Pressure allowed, 105 lbs.

TUG OWEN—Cylinder 20 by 20, Steam Pressure allowed, 104 lbs.

CENTRIFUGAL PUMPS.

SEVEN AND FOURTEEN INCH SUCTION.



CRAIG SHIP BUILDING CO.,

TOLEDO, OHIO

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

**METAL
AND WOODEN
SHIP BUILDERS.**

Repairs to Metal and Wooden Ships
A Specialty.

H. A. HAWGOOD, Pres't.
PHILIP MINCH, Vice-Pres't.

C. A. MORGAN, Gen'l Mang'r.

J. A. SMITH, Sec'y.
J. R. SPRANKLE, Treas.

The Cleveland Tug Company,

First-class Tugs,
Steam Pumps,
Divers, Hawseers,
Lifting Screws,
Etc., furnished
Promptly on
Orders by Tele-
graph or oth-
erwise.



Steamers when
outside wanting
our Tugs, blow
one long whis-
tle and as many
short ones as
they want tugs.

OPEN DAY and NIGHT.
Long Distance Telephone 725.

OFFICE 23 RIVER ST.
Cleveland, Ohio.



The "CINCINNATI" Automatic STEAM STEERING GEAR

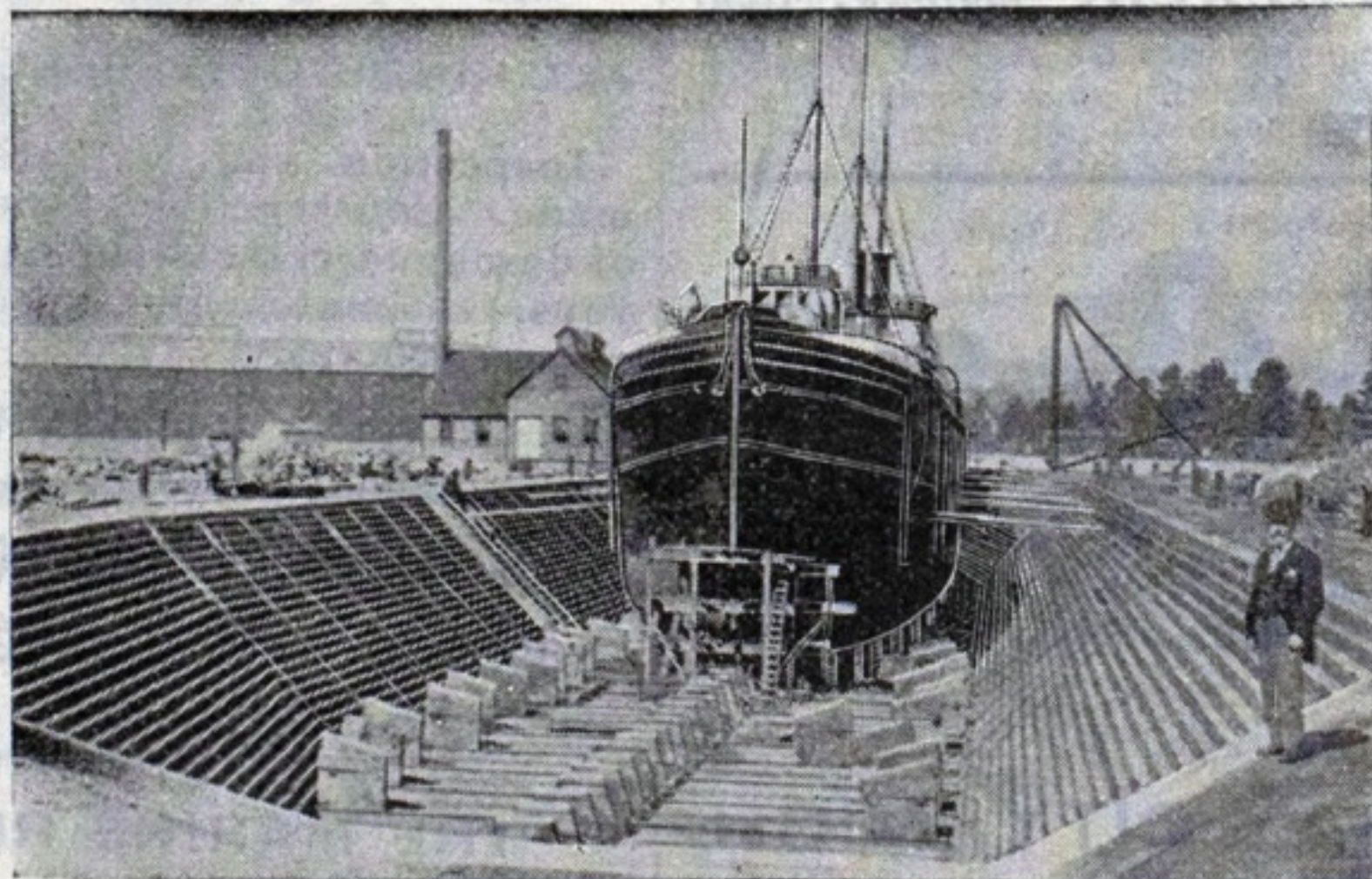
Simple, Powerful Machine. Noiseless and Sure. Send for Circular.
FRONTIER IRON WORKS, Detroit, Mich.,
AGENTS FOR THE LAKES.

AMERICAN STEEL BARGE CO.

STEEL AND METAL SHIPS

OF ALL CLASSES BUILT ON SHORTEST POSSIBLE NOTICE AT OUR YARDS AT
WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300 FT. BOAT IN DOCK.



Plates and
Material
Always on
Hand to
Repair all
kinds of
Metal
Ships in
Shortest
Time.

Best
Quality
of Oak in
Stock for
Repairing
Wooden
Vessels
of all
Classes.

SIZE OF DOCK

| | | | |
|----------------------|------------|-----------------------|---------------|
| Length, Extreme..... | 537 feet. | Entrance, Top..... | 55 feet 9 in. |
| Breadth, Top..... | 90 " 4 in. | Entrance, Bottom..... | 50 " |
| Breadth, Bottom..... | 52 " | Depth over Sills..... | 18 " |

LARGEST DRY DOCK ON THE LAKES.

PRICES FOR REPAIRS AND DOCKING
SAME AS AT LOWER LAKE PORTS.

SUPERIOR, WIS.

A NUMBER OF PROPELLER WHEELS IN STOCK AT DRY DOCK.

A. GILMORE'S SONS,

DRY DOCKING
SHIP BUILDING
AND REPAIRING.

EAST SIDE, NEAR IRONVILLE. - - - TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate.
Nine feet water over sill.

RATES OF DOCKING, Ten Cents per Registered Gross Ton for Vessel over 200 Tons.
Jig Mill and Planer in connection with Dock. PHONE NO. 157.

Paint your Vessels with Superior Graphite Paint

NO BLISTERING, CRACKING OR SCALING.

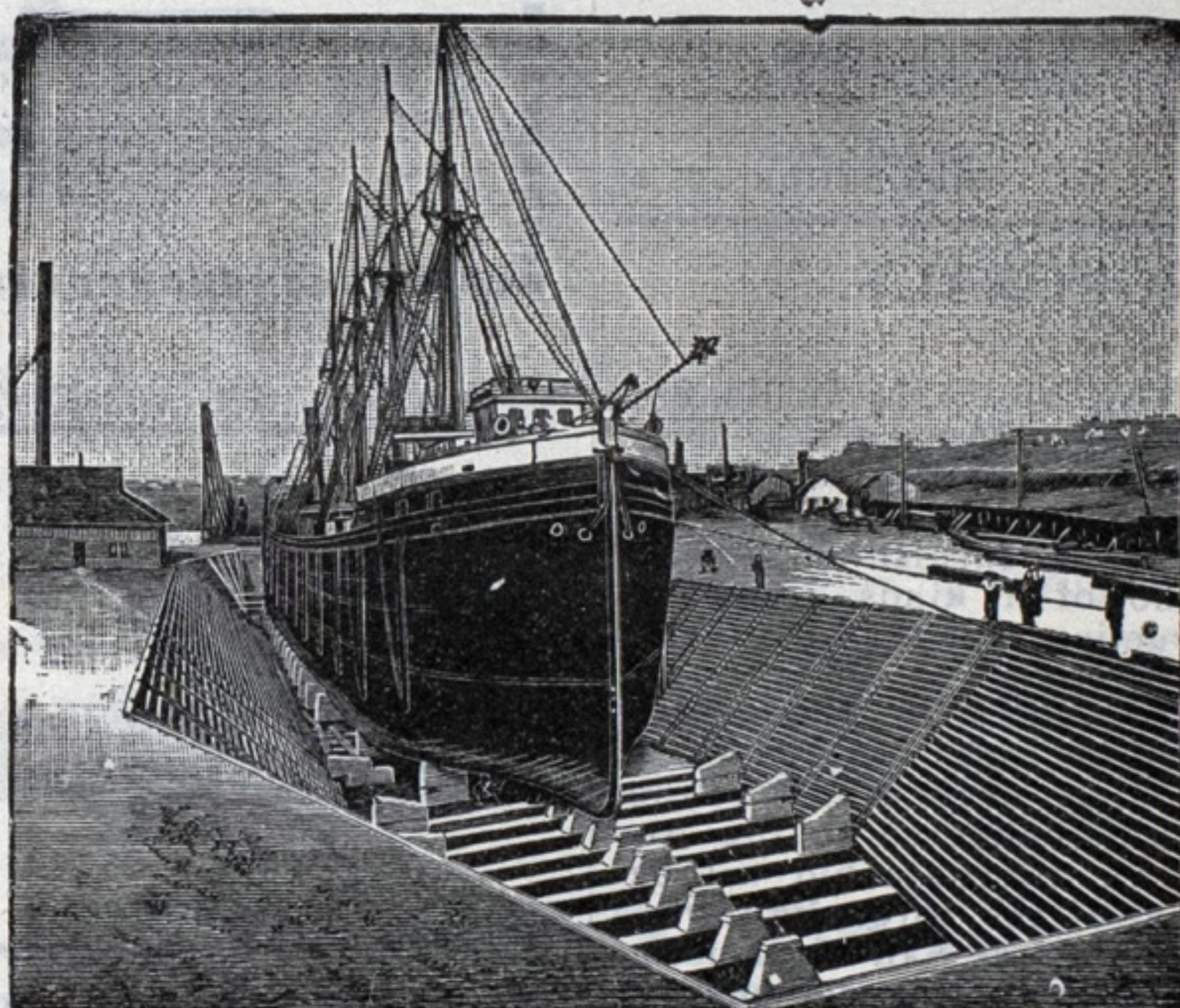
Made especially for Stacks, Decks, Sides, Hulls and Water Compartments.
Strictly anti-rust, and most durable and economical.

DETROIT GRAPHITE MFG. CO. 542 River St., Detroit, Mich.

WHITTON & BATES, Agents, 503 Perry-Payne Building, Cleveland, O.

THE SHIP OWNERS DRY DOCK CO.

Largest
DOCK
YARD
on the
GREAT
LAKES.



Capacity
with
Two Docks
to Dock
the
Largest
Ships on
the Lakes.

GENERAL REPAIR WORK PROMPTLY ATTENDED TO.

Being equipped with Lucigen Lights we do work at night as well as day.

TELEPHONE 1635.

Foot of Weddell Street, CLEVELAND, O.

C. A. MACDONALD & CO.,

GENERAL MARINE INSURANCE AGENTS.

RIALTO BUILDING,

CHICAGO, ILL.

THOS. WILSON,

MANAGING OWNER WILSON'S TRANSIT LINE,

General Forwarder, Freight and Vessel Agent.

CLEVELAND, O.

JOHN MITCHELL.

JOHN F. WEDOW.

ALFRED MITCHELL.

MITCHELL & CO.,

VESSEL AND INSURANCE AGENTS.

Office Telephone, 767.
Residence John Mitchell, Phone 3506.

508-509-110 Perry-Payne Bldg., CLEVELAND, O.

C. R. JONES & CO.,

VESSEL AGENTS.

FIRE AND MARINE INSURANCE.

Nos. 501, 502 and 503 Perry-Payne Bldg., CLEVELAND, O.